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AN ECONOMIC CRITIQUE OF
SWEDISH INDUSTRIAL LOCATION POLICY

BY



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A THESIS

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The undersigned certify that they have read, and recommend
to the Faculty of Graduate Studies for acceptance, a thesis en-
titled AN ECONOMIC CRITIQUE OF SWEDISH INDUSTRIAL LOCATION
POLICY submitted by Ingrid A. Bryan in partial fulfillment of
the requirements for the degree of Master of Arts.

ABSTRACT

Swedish industrial location policy was initiated in its present form in 1965, and from its inception created considerable discussion and criticism. The purpose of this thesis is to evaluate the policy with reference to its economic goals: the abolition of regional unemployment and the maximization of national income.

In view of its short time in operation, nothing conclusive can be said about the success of the Swedish policy. However, the basic contention of this thesis is that it is possible that the location policy has a detrimental effect on economic growth by preventing or slowing down the structural changes that are taking place in the Swedish economy and therefore encouraging a misallocation of resources. It is also believed that the policy is not sufficiently far-reaching to solve the problem of regional unemployment.

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INTRODUCTION

The purpose of this thesis is to present an evaluation in economic terms of location policy as it is carried out in Sweden since 1965. In view of its short time in operation, only limited appraisal in terms of results can be made. It is believed that knowledge of the Swedish policy, taking account of both its merits and its shortcomings, could be of some interest to the discussion of location policy in Canada.

Like many other countries, the Swedish government has been committed to a policy of full employment ever since the Great Depression in the 1930's, when unemployment rates of 20-30 per cent were experienced in Sweden. In the latest Swedish long-term prognosis, the commitment was restated: "Full employment can be considered to be the main target of the economic policy of our country."¹ As the unemployment rates in the 1950's and the 1960's have varied around 3 per cent, attention has now been focused on the problem of regional unemployment. The regional disparity in unemployment rates that the Swedish economy displays is caused primarily by the large structural changes that have taken place over the last few decades.

In 1870, approximately 70 per cent of the labour force was employed in agriculture, in 1966, 7 per cent.² In those hundred years

¹Statens Offentliga Utredningar (SOU) 1966:1, Svensk ekonomi 1966-1970 med utblick mot 1980, p. 49.

²Odd Gulbrandsen och Assar Lindbeck, Jordbrukspolitikens mål och medel, p. 9.

Sweden was transformed from being a very economically backward rural society into a highly efficient industrial society. In 1850, Sweden had a great economic potential strength besides agriculture in her resources of timber and iron-ore. The stimulus that was necessary to bring about the "take-off" came around 1850 by a sudden increase in the European demand for timber.³ In the late 1860's timber constituted about 50 per cent of the total exports. Iron exports also expanded, but less spectacularly. In the 1870's investment occurred in railways which gave a further stimulus to the Swedish economy. A more spectacular expansion started in the 1890's. Iron-ore was in heavy demand abroad due to changes in the European iron industry. Exports of agricultural products also increased. They then accounted for 15 per cent of total exports, but then started to decline. Timber exports reached their peak in the 1890's, but during that decade an explosive development of the pulp industry started. As wood pulp is further processed than boards and pitprops, it provided a challenge to Swedish inventors and technicians. At the same time the strong growth of the engineering industry embodied innovations for which a market was to be found. By the end of the First World War, Sweden had entered the class of industrial nations. Like many other small nations, Sweden is highly dependent on foreign trade. Approximately 20 per cent of the gross

³This section is based on Karl-Gustav Hildebrand, "Sweden" in First International Conference of Economic History, Contributions and Communications, pp. 273-285.

national product is exported. In 1961, 53 per cent of total exports consisted of iron-ore, iron and steel, and 31 per cent of forestry products.⁴ Generally the trend has been towards a larger proportion of processed materials, such as paper and machinery, but despite this approximately half of the Swedish exports can be classified as raw materials.

Due to the increased competition in the export market over the last few decades, the forestry and mining industries have had to adapt themselves and become increasingly mechanized. The mechanization of the forestry industry and the general decline of agriculture, especially in northern Sweden, released a large part of the labour force. Between 1950 and 1960 employment in forestry and agriculture declined from 41 to 25 per cent of the total labour force in Västerbottens County, from 33 to 18 per cent in Norrbottens County and from 41 to 31 per cent in Jämtlands County.⁵ In the south of Sweden the unemployed were easily assimilated by the growing manufacturing and service industries, while in the north of Sweden, which displays a less-differentiated industrial structure and is highly dependent on forestry and mining, the labour force had more difficulties in finding employment.

Between 1940 and 1960, migration and population growth caused a

⁴ Erik Westerlind och Rune Beckman, Sveriges ekonomi, struktur och utvecklingstendenser, p. 72.

⁵ SOU 1963:58, Aktiv lokaliseringpolitik, Betänkande avgivet av kommittén för näringslivets lokalisering, p. 49.

decline in the rural population of 750,000 people and an increase in the urban population of 1,900,000 to a total of 5,450,000, which is a considerable change in view of a total population in 1960 of 7,500,000.⁶ The population and industrial expansion has mainly benefited the area around Lake Mälaren, the Gothenburg and the Malmö regions, while most of Norrland, particularly the interior parts, suffered. In 1962 Norrland had only 16 per cent of the total population, but accounted for 34 per cent of the number of unemployed.⁷

Available prognoses for the future indicate that the present trends will continue to develop, possibly at an accelerated rate.⁸

In the text, the Swedish riksdag is referred to as the Swedish Parliament, Kunglig Majestät as the Cabinet and arbetsmarknadsstyrelsen as the Labour Market Board. The Swedish local authority Kommun has been translated as municipality, län as county, tätort as urban centre, which is not adequate in view of the Swedish definition of the word. A tätort is a densely populated settlement with at least 200 inhabitants. The low figure is generally justified on account of Sweden being a sparsely populated country. Further, the Labour Market Board has divided Sweden into A, B, and C-regions, each with a specially designated urban centre to serve as a service centre for the surrounding region. An A-region should contain at least

⁶Gunnar Arpi, Sveriges nutida näringsliv, p. 25.

⁷SOU 1963:58, p. 103.

⁸See for example the Swedish long term prognosis, referred to above as SOU 1966:1 Svensk ekonomi 1966-1970, or the local prognosis for Norrbottens county, BD 80 Länsutredningen för Norrbottens län.

30,000 inhabitants, a population base which should be sufficient to support full secondary schooling, complete hospital facilities and a fully differentiated retail business. There are 91 A-regions as opposed to 152 B-regions. A B-region has at least 15,000 inhabitants, with its service centre having full shopping facilities, a small hospital or several doctors and partial secondary education. The C-regions have at least 7,500 inhabitants with service centres mainly containing primary education facilities.⁹

The text is divided into four chapters. The first chapter contains a description of the Swedish policy, the second gives a brief theoretical and empirical account of location analysis. The third chapter is divided into two parts: a general discussion of government location policy and a short summary of measures undertaken in some other countries. The nucleus of the thesis is found in the final chapter: "An Economic Critique of Swedish Location Policy."

⁹For further information, see Arbetsmarknadssturelsen, Arbetsmarknadsstyrelsens regionindelning 1961. A- och B-regioner. En översyn av den regionala indelningen, utförd inom arbetsmarknadsstyrelsens lokalisering- och utredningsbyrå.

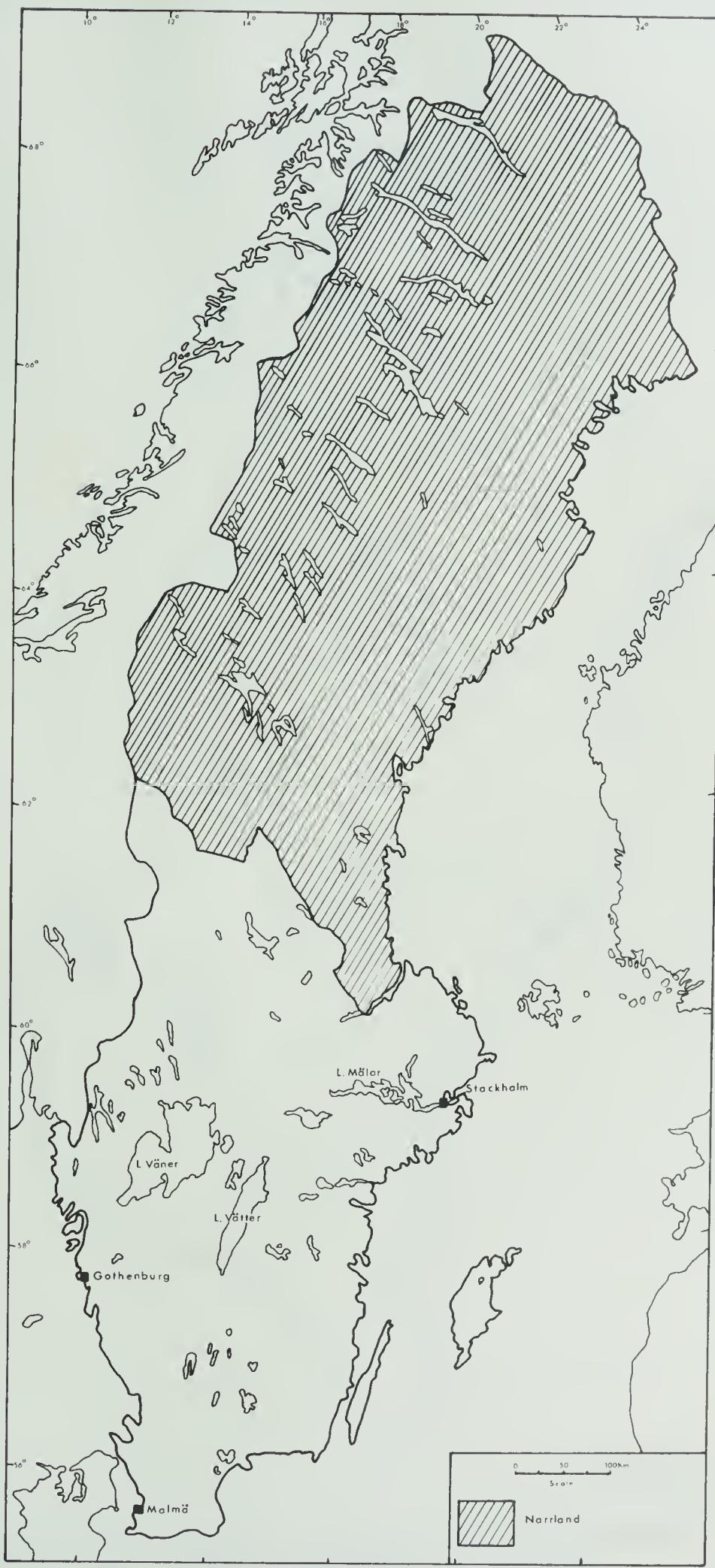




Fig. 2 Map showing county divisions of Norrland.

CHAPTER 1

SWEDISH INDUSTRIAL LOCATION POLICY

1.1. History of Government Location Policy to 1965

Government intervention with respect to the location of industry in Sweden dates back in history several hundred years. For example, strict regulations were instituted that ironworks must not be placed so densely as to seriously affect the yield of the surrounding forests in their use of charcoal. Even the Swedish railway net was planned with consideration of the relocation of settlements. Today's debate about central places and the division of Sweden into A, B and C-regions corresponds to the historical debate about the prohibition of trade in the rural areas of early Sweden.¹

During the last decades far-reaching government location policy has been deemed necessary because of the factors accounted for in the introduction, i.e. the large structural changes in production and employment that have taken place. In 1947, the Swedish government ordered a special committee to perform an investigation into the factors behind the location of industry, and to outline a course of action. The report was presented in 1951,² and a government proposal based upon the report was accepted by the Swedish Parliament in 1952.

¹Henning Burlin, "Lokaliseringsspolitiken - resultat och erfarenheter," Ekonomisk revy 1968:1, p. 7.

²SOU 1951:6, Näringslivets lokalisering. Betänkande avgivet av Utredningen angående näringsslivets lokalisering.

In general the report advocated an active location policy on economic, social and defensive grounds. It was emphasized that government intervention could probably reduce the total investment costs of society, lower the transport and production costs and lead to the employment of otherwise unused labour. The continuing depopulation of rural areas and the concentration of industrial activity in the large cities would increase the difficulty of supplying the rural population with social services comparable to those of the large urban centres. As the possibilities of locating industries in agricultural areas were limited, the central issue, according to the committee, was to decide which rural centres should experience an increase or a decrease of their population. The main task of government policy was to support the development of such places as could function as commercial and cultural centres for the rural population, whereby it would be possible to coordinate settlement groups in larger areas into harmonious regions.

In influencing the location of a specific industry, the government should in the first instance only rely on giving advice and information. If this did not give the desired effect, economic subventions could be considered, but not in the form of support to an individual industry, but in the form of general measures such as reduced transport rates. The municipalities should not be allowed to give subventions. Government measures should be based on investigations, which clearly state the social and economic consequences of different location alternatives.

The Committee proposed the establishment of a central location authority, and subordinate authorities in the twenty-five counties.

The government proposal followed the recommendations of the report closely, and stated that the location policy should be of a trial character with its administration handled by the Labour Market Board.

During the subsequent years special investigations were ordered into the possibilities of developing industry and population in Bohuslän, Jämtland's county and Tornedalen.³ The report on Tornedalen led to a government proposal with guidelines for the development of employment opportunities in this area. The Labour Market Board was given the task of compiling material relating to the future industrial and settlement structure in the whole country which was published in 1958.⁴

Relief works were used from the beginning of 1963 to June 30, 1965, to construct industrial buildings. This activity meant that municipalities were allowed to construct plants to be rented to or purchased by a private firm. Government grants covered as a rule one third of the cost of construction, but in some cases as much as 50 per cent of the total building costs. This location policy measure applied to most of northern Sweden, subsequently named the Development Area.

³SOU 1963:58, Aktiv lokaliseringpolitik, p. 16.

⁴Arbetsmarknadsstyrelsen, Befolkning och näringsliv. Ett material, avseende riket, länen och preliminärt avgränsade regioner, sammanställt inom arbetsmarknadsstyrelsens lokalisering- och utredningsbyrå.

Limited companies, economic associations and savings banks, since 1953, are entitled to deposit untaxed profits in investment funds for the purpose of reducing economic fluctuations. No withdrawal from these funds can take place without government permission, the intention being to encourage enterprises to postpone investments to periods of slack in the economy. In 1963 and 1964 the government authorized the Labour Market Board to use investment funds for location policy purposes by granting special licenses for investments in the Development Areas.⁵

In connection with the abolition of the law stipulating that official permission be required for each building to be erected in the country, it was argued that an important tool for influencing the location of industry was lost. Subsequently in 1959 a new committee was appointed to investigate and present material

which from a general and an economic viewpoint would illuminate the possibilities for the location of industry to different parts of the country. On the basis of this, if possible detailed guidelines for location policy should be worked out. Advisory and informative service and its formulation should be considered. The possibility and advisability to encourage firms through different positive measures to establish themselves in places where this was deemed desirable from society's point of view should be investigated. The question of influencing the location of industry by legal action should be taken into consideration.⁶

⁵ Arbetsmarknadsstyrelsen, Meddelanden från utredningsbyrån, Lokaliseringpolitiska insatser 1.1.1963 - 30.6. 1967, p. 2.

⁶A quote from the directives for the investigation issued by the Minister for Social Affairs. See SOU 1963:58, Aktiv lokaliseringpolitik, p. 18.

The committee was also told to present concrete suggestions for the organization of a location policy and to utilize experiences from other countries.

A report was presented by the 1959 government committee in 1963, in English translation named "Active Location Policy," with two sub-reports attached to it: "Studies in the Location of Industries" by Gunnar Törnqvist and "Particular Investigations."⁷ This report was followed by a government proposal which was accepted by Parliament in 1964. The new policy was initiated early in 1965 and has not been amended nor changed since then.

1.2. The Present Swedish Industrial Location Policy

Reasons, Aims and General Guidelines

The need for an active location policy was emphasized again in the 1963 report. It was necessitated by the accelerated structural changes that had taken place in the Swedish economy. According to the Committee, non-intervention by the government might lead to:

- (1) non-economic use of labour and natural resources;
- (2) a population base in certain areas which would be too small to maintain an adequate social service in the form of schools and hospitals;
- (3) inadequate development of collective services in the big urban areas due to the large concentration of population;

⁷SOU 1963:58, Aktiv lokaliseringspolitik, SOU 1963: 49, Aktiv lokaliseringspolitik, bilaga 1. Studier i industrilokalisering av Gunnar Törnqvist. SOU 1963:62, Aktiv lokaliseringspolitik, bilaga 2. Särskilda utredningar.

(4) undesirable difficulties in the defense of the country in view of the continuing concentration of activity in the large urban centres of Stockholm, Gothenburg and Malmö.⁸

The Committee considered the location policy being implemented at the time of the report insufficient, both with regard to means and organization.

In accordance with the above mentioned four points, the location policy advocated by the Committee should have three aims:

(1) To promote a location of industry such that the country's resources would remain fully utilized and distributed among different areas in such a manner as to maximize the national income;

(2) To promote a harmonious society which as far as possible would supply people with a comparable standard of social and cultural service regardless of where they lived;

(3) To locate industry in such a way as to facilitate the defense of the country.⁹

It was the task of the relevant authorities to coordinate these aims as far as possible.

In laying down general guidelines for a policy, the Committee emphasized that future location places must be well-equipped urban centres, which could function as centres for the rural population in

⁸SOU 1963:58, Aktiv lokaliseringpolitik, p. 318.

⁹Ibid., p. 319.

accordance with the recommendations already made by the Labour Market Board in the division of Sweden into regions with central places.¹⁰

It was also emphasized that in the implementation of the location policy, the establishment of industries with widespread effects should be encouraged, that is, industries which base their production on finished or semi-finished products as opposed to purely raw-material oriented industries.

The Proposed Policy

The Committee advocated three means of influencing the location of industry:

(1) Improved and expanded information service. Material had been compiled for some time by the Labour Market Board on the industrial structure in relevant regions, on free industrial sites, on ground rentals, the availability of roads, water and sewage and similar matters. This information had been available to firms on request. It was felt that this service could be improved by more detailed investigations into the conditions in the different regions. Further, the management in general did not have sufficient knowledge of the information which was available at the Labour Market Board.

(2) Expanded and better organized locational planning activity. It was recommended that locational planning should include research regarding the social consequences of the industrial development of different geographical areas; a judgement of which policy measures

¹⁰Arbetsmarknadsstyrelsen, Arbetsmarknadsstyrelsens regionindelning 1961.

would be required considering the stated aims of the location policy; investigations into the consequences of location at alternative sites and a coordinating activity aiming to urge other government departments to take locational factors into consideration in their planning.

(3) Direct financial support to industry. It was strongly emphasized that this aid should not take the form of continuous support to a weak industry, but rather as a "once and for all" subvention to ease difficulties encountered in the inception or expansion of firms.

It was also felt that the government could influence the location of industry by the provision of good educational facilities, by the provision of housing, by the levelling of regional differences in building costs, by improving communications and finally by the location of government agencies.

The Committee recommended that the financial support should be differentiated in accordance with certain criteria. On the one hand, particular subventions should be given in B-regions with large unemployment, low per capita income and/or weakly developed industrial structure (Development Areas). A region was said to have a weakly developed industrial structure if manufacturing employees accounted for less than 25 per cent of the total labour force. General subventions could be given to large areas of Sweden to encourage the development of industries in regions or places where the labour force was under-utilized (General Subvention Areas). A more rigorous definition of what was to constitute Development

Areas and General Subvention Areas was also given.¹¹

The Committee recommended that special attention should be given to Norrland in view of the high unemployment rate, the low degree of industrialization and the rich endowment of natural resources.

It was felt that government aid to industries in the Development Areas should be intended to support the establishment of new industries, the expansion of existing industries, and to encourage movement of industry from other parts of the country. The subventions should not exclude firms located outside the central places of the B-regions, nor should they exclude for example mines, which for obvious reasons could not locate in a central place. The support should take the form of investment subventions, credit support, and education and moving grants to labour.

Investment subventions were partially justified on account of the high building costs frequently encountered in the Development Areas. An earlier investigation by the Swedish Department of the Interior showed differences in building costs as high as 35 per cent between some parts of southern Sweden and Norrbottens County.¹²

The investment grant should normally cover up to 33 per cent of the costs involved, but under special circumstances up to 50 per cent of the cost of new buildings, or additions to existing buildings, or modernization of buildings, would be covered, regardless of the

¹¹SOU 1963:58, Aktiv lokaliseringpolitik, p. 349.

¹²Ibid., p. 352.

size of the investment. Such grants would be provided only if the industry's location or proposed location was in agreement with the location policy. It was further strongly emphasized that commercial aspects of the project must be in accordance with sound business practice.

Government credit support should take two forms: government loans and government guarantee of commercial loans. The government credit support in existence at the time of the report mainly applied to small industries and was deemed insufficient, but it was felt that it should continue to function parallel to the new support. Credit aid should be given in the Development Areas to new industries, expansion of existing industries and to encourage movement of industry from other parts of the country. It should be granted for building or rebuilding of works, and for buying machines and tools. In view of the importance of the tourist industry, credit support could also be given for the establishment of tourist amenities.

The Committee was generally advocating aid in the form of guarantees of commercial loans, as in this case the actual capital outlay was limited to coverage of losses on the loans. On the other hand, it was argued that an expansion of industry in the Development Areas might require considerable government support with some risk-taking, which might be justified from a general economic viewpoint under which circumstances commercial loans, even with a government guarantee, might be impossible to obtain. Further, in times of credit restrictions, increased investment activity in the develop-

ment areas might be called for. Direct government loans should therefore be obtainable if it proved impossible to obtain loans from other sources. It was generally emphasized that government credit support should only be given after all other ways have been tried.

The repayment conditions were to be flexible and should depend on the special circumstances of each industry. Even non-payment of interest could be considered during a specified short period.

Both with regard to investment subventions and credit support, there should be some control, preferably by the municipality, to ensure that the funds were used for the intended purpose.

Education and training grants for labour were given in connection with relocation and establishment of industries in areas of unemployment at the time of the report, but the Committee recommended that higher grants should be given to Development Areas. Moving grants should also be given, mainly because of the particular difficulties in recruitment of skilled labour that industries in these areas experience. The moving grants should take the form of travel grants, settlement grants, family grants and household equipment grants. Grants should be given without consideration of financial need and also to workers employed elsewhere when they apply for grants.

As regards General Subvention Areas, government support should be granted to encourage industrial activity which in its production and employment needs complemented the existing industrial structure. Government aid should take the form of credit support and grants for education and training of labour.

The credit support should only be given as government guaranteed loans and should be granted for the establishment of new industries which would lead to a higher utilization of the local labour force. In places where a total or partial shut-down of an industry was imminent, and this would lead to considerable difficulties for the local labour force and the region, credit support could also be given for the expansion of threatened firms.

Training grants should be given in connection with recruitment of unskilled labour to industries employing local labour or industries which otherwise constitute a suitable complement to the industry in the region.

As mentioned above, the Committee recommended special attention to, and measures to strengthen, industry in Norrland. A special investigation into the implications of reduced railway transport costs in Norrland gave some indication that it would probably lead to a reduction in employment instead of an expected increase, mainly due to increased competition for the market-oriented local industries for which the high transport costs acted as a tariff barrier.¹³ Instead of a general reduction in railway transport costs, it was felt that a better result could possibly be achieved by regional transport rate agreements or agreements between particular industries

¹³ Lars Backlund, "Fraktreducering för norrländsk industri som lokaliseringbefrämjande åtgärd," in SOU 1963:62, Aktiv lokaliseringsspolitik. Bilaga 2. Särskilda utredningar.

and the state controlled railway company. A reduction in ticket prices for rail and air should be considered and attempts made to shorten travelling times and to improve telecommunications. Due to the severe climate, the transport difficulties are increased during the winter. A government investigation should be started into the need and organization of ice free "reserve ports" to which all shipping could be diverted in winter time.

The Committee also recommended a 10 per cent price reduction in the cost of electricity and an equalization of petrol and oil costs throughout the country. Regarding a general equalization in the cost of living, the Committee was of the opinion that this was taken care of by the current division of Sweden into price, or cost of living, regions. High cost regions are compensated by higher salaries both in government and private employment. The Committee concluded that this system could be improved.

It was felt that the great dependance on forestry in northern Sweden made it necessary to improve the social services for forestry workers and their families by encouraging the development of more central places. Further, because of the small population base with its generally high percentage of children and old people, the local taxes in some areas were extremely high. This would act as a deterrent to industrial location. The government should consider an increase of government grants to such municipalities. Generally, however, the role of the local authorities in influencing locational decisions should be restricted to provision of information.

The Committee also discussed the question of whether the government should be able to prevent an industry locating at a certain place by legal action. It was argued that no additional advantages would be gained from enforcement by law.

In view of the fact that the majority of the proposed means had not been tried in Sweden before, the Committee suggested that the location policy should have an initial trial period of five years.

The Financing of the Location Policy

The Committee proposed a particular government allocation for direct investment grants, a special fund for the granting of loans and a framework for covering guarantees. Grants, loans and guarantees should be allocated by the central location authority, and in some cases directly by the government. The training and moving grants should be given from the funds reserved for this purpose at the Labour Market Board.

As to the actual size of the total government support, the Committee based its calculations on a superfluous labour force in 1970 of 20,000 men and 31,000 women in the Development Areas which in 1960 had a total of 700,000 inhabitants. However, it was argued that migration of labour from the Development Areas was inevitable and it seemed impossible to increase the employment of women to the national average in the short run. Due to these and several other factors, the Committee based its estimates on attempting to provide industrial employment for 16,000 people. On the average, industrial investment in buildings, machinery and equipment per worker, i.e. the capital-labour ratio, would have an approximate value of 60,000 Sw. Cr. Employment of another 16,000 people

would therefore require a gross investment of 960 million Swedish crowns, without consideration of indirect employment effects. Having in mind that building costs usually account for 40 per cent of the total investment costs, and that the proposed investment subventions should cover 33 to 50 per cent (an average of 40 per cent) of total building costs, the allocation for direct investment grants over the five year trial period should be 150 million Swedish crowns. On the average 43 per cent of the total investment costs for small industry has been taken care of by government credit support in the years 1955-1960. It was felt that this should be increased to 45 per cent, which is 360 million Swedish crowns of the remaining 810 million, half being allotted for loans and the other half for guarantees. The 440 million crowns which were not covered were expected to be supplied by normal commercial institutions.¹⁴

For the General Subvention Areas with a population in 1960 of approximately one million, 300 million crowns should be allotted to cover government guaranteed loans. On the basis of covering 35 per cent of total investment costs in this case, 15,000 people could be given employment.¹⁵ None of the estimates given take account of indirect employment effects and should therefore be regarded as minimum estimates.

Organization

As mentioned above, the Committee recommended that the location

¹⁴ SOU 1963:58, Aktiv lokaliseringpolitik, pp. 367-369.

¹⁵ Ibid., p. 370.

policy should be handled by a central organization, but with a regional office in each county. The task of the central authority would be to undertake research, locational planning, advisory and informational activity and the administration of subventions. The Committee particularly emphasized the need for research into the social cost of different locational alternatives, the factors influencing the location of industry, and research into the social consequences of the current redistribution of population between different parts of Sweden and between rural and urban areas.

The Committee recommended that the locational administration be placed under the Labour Market Board. It should be split into three sections: the Locational Bureau, handling advice and information, the Loan and Grant Bureau handling subventions, and the Planning Bureau for research and locational planning. In addition a section of the Labour Market Board should be named the Location Delegation and should enter into decision making as to loans, grants and guarantees.

The regional authority was to deal with research and planning in the region, give advice to municipalities and industries, and administer subventions. As to research and planning, this should be done in conjunction with the central authority, who would depend on information given by the local authorities. Applications for loans or grants should be sent to the regional boards, who should send them on to the central authority after having commented on them. On the whole, the regional authority would be subordinate to the central authority.

The Government Proposal

The government proposal incorporated most of the recommendations

of the Committee with two notable exceptions.¹⁶ One was the definition of the Development Areas. The Committee's proposal met considerable criticism, as its definition would imply no help to the coastal areas of northern Sweden. Development Areas according to the government proposal are the four most northern counties, Hälsingland, the north of Kopparberg's county, northwest Värmland, Dalsland and the north of Bohuslän. It was believed that to apply locational measures to areas under this definition would improve the possibilities of development of the northern coastal stretch, which might favourably influence the development of the interior. In other parts of the country, support is given in particular areas where considerable employment difficulties are expected or have arisen as a consequence of a shutdown, as a result of branch rationalization or for other such reasons. Aid could also be given to an area experiencing employment difficulties due to an undifferentiated industrial composition.

The other major exception was that government guaranteed loans were not recommended, since their availability depended on the cyclical fluctuations of the economy. The total government subvention should not exceed 67 per cent of total investment costs, the direct grant not exceeding 35 per cent, and in special circumstances not exceeding 50 per cent. The proposal advocated a total sum of 800 million Swedish

¹⁶Kungl. Maj:ts proposition nr 185 år 1964. Kungl. Maj:ts proposition till riksdagen angående riktlinjer för en aktiv lokaliseringpolitik m.m.; given Stockholms slott den 16 oktober 1964.

crowns for location purposes, 300 million for grants, and 500 million for loans.

As regards special measures for Norrland the government proposal rejected all support in the form of direct subventions.

1.3. Location Policy Measures 1963-1968

From July 1, 1963 to July 1, 1965, the Labour Market Board allocated 120 million crowns as grants to municipalities for the erection of industrial buildings.¹⁷ From the same date up to January 1, 1968, industries have been allowed to utilize approximately 550 million crowns from their investment funds for location purposes. Out of the 800 million crowns set aside by the government for the five-year period starting 1965, 684 million crowns had been utilized by January 1, 1968. Consequently the government increased the total sum to 1,000 million crowns, 750 million for loans and 250 million for grants, thus resulting in a decrease in the grant portion of the subvention.

The subventions gave rise to investments to a value of 2,200 million crowns, 700 million for buildings. The increase in employment is estimated to be 24,500, 14,000 of which is in Norrland. In total, 690 working places have received government aid, half of which were metal-based industries.

¹⁷Burlin, "Lokaliseringpolitiken," Ekonomisk Revy 1968:1.

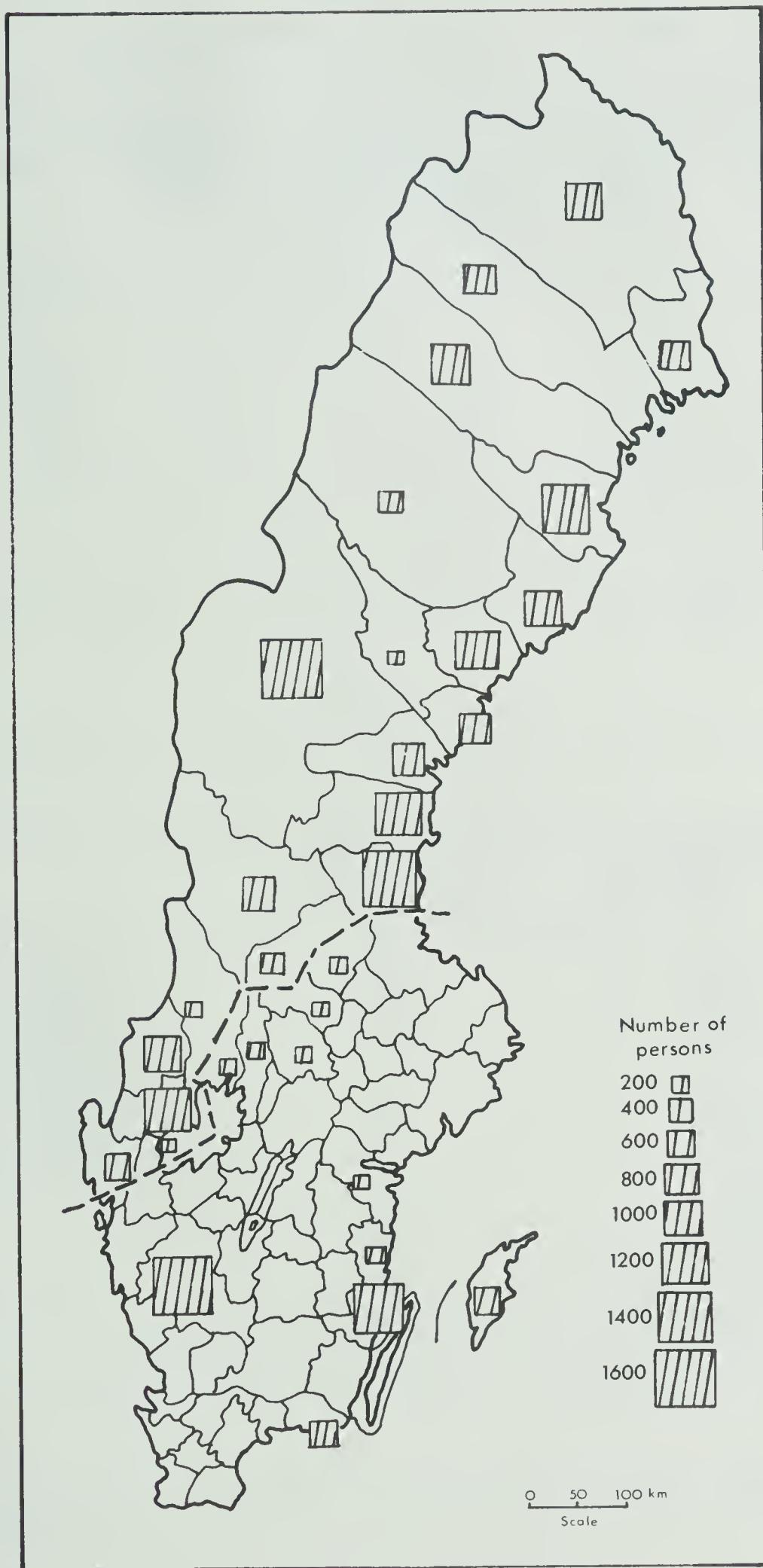


Fig.3 Estimated increase in employment in A-regions.

TABLE 1
LOCATIONAL MEASURES 1.1. 1963 - 1.1. 1968¹⁸

Form of support	Number of working places	Estimated Investment costs (million crowns)		Estimated support (million crowns)	Estimated employment increase
		Buildings	Machinery		
Relief Works	233	319	-	120	9,700
Investment Funds	184	583	308	553	4,750
Grants and Loans	323	577	442	560*	10,000
Total	690	1,479	750	1,233	24,450

* Loans 450 million crowns and grants 110 million crowns.

TABLE 2
GOVERNMENT AID DISTRIBUTED BY INDUSTRIES. 1.1. 1963 - 1.1. 1968¹⁹

Industry	Number of working places	Estimated employment increase
Metal and Mechanical	269	13,550
Wood and Furniture	131	2,600
Textile and Clothing	73	2,150
Chemical, Technical, Plastic and Rubber	31	1,650
Pulp, Paper and Printing	48	1,300
Mining and Stone	11	450
Food, Beverage and Tobacco	40	550
Tourist	16	150
Other	71	1,950
Total	690	24,450

¹⁸Ibid., p. 8.

¹⁹Ibid., p. 9.

CHAPTER 2

FACTORS INFLUENCING INDUSTRIAL LOCATION

Before attempting an economic critique of Swedish industrial location policy, it is essential to analyse the factors influencing the location of industry. The chapter is divided into six sections, treating the influence of: (1) transport costs, (2) labour costs, (3) agglomerative and deglomerative factors, (4) other cost factors, (5) market factors, (6) the availability of skilled labour, taxation, local authority cooperation and personal factors. Section seven contains a summary and a conclusion based on the theoretical and empirical evidence accounted for in the previous sections.

2.1. Transport Costs

Transport costs and their spatial variations have received perhaps the greatest attention in classical location literature. This is due to several factors. In the first place, transport costs render themselves easily to theoretical arguments and constructs. Secondly, at the time most of the analysis was undertaken, transport costs were probably a more important factor in influencing the location of industry than they currently are. Thirdly, a large amount of the literature seems to have concentrated on industries where transport costs constitute a large percentage of the total production costs.¹

¹SOU 1963:49, Aktiv lokaliseringpolitik, Bilaga 2, p. 150.

Much of the present analysis of the influence of transport cost on industrial location is built on Alfred Weber's theory of location as formulated in his "*Über den Standort der Industrien*" in 1909.² His theory is most appropriately judged against the early twentieth century structure of the German railway system.

The problem Weber tried to answer was how transport costs influence the distribution of industry, assuming that no other relevant cost factors exist. Transport costs were only determined by weight and distance, all other factors being convertible into those two. For example, differences in transport rates can be dealt with by assuming that railway lines with higher rates are prolonged proportionately, and those with lower rates shortened. Lines with decreasing rates with increasing distance can be handled similarly. Higher rates due to bulky goods or differences in rates between parcels, half car-loads and full car-loads can be taken care of by assuming an ideal weight in addition to the real weight. Weber justified his simplifications by arguing that weight and distance determine how much labour is necessary, and labour is the most important factor of cost, and thus rate-making.

Further simplifying assumptions are:

1. The locations and sizes of the places of consumption of each kind of product are given;
2. The location is produced in one stage of production.³

²Alfred Weber, Alfred Weber's Theory of the Location of Industries, Translated with an Introduction and Notes by C.J. Friedrich.

³Ibid., p. 48.

Weber in addition introduced the distinction between ubiquitous and localized material. Ubiquitous materials could be found everywhere, while localized materials could only be found in a certain locality. The latter could be subdivided into pure materials, which retained their weight in the production process, and weight-losing materials. Weber also formed two indices which have been widely used, namely the material index and the locational weight. The material index measures the weight of localized material utilized to the weight of the product, and the locational weight denotes the total weight to be moved per unit of product.

Much of Weber's analysis was conducted in terms of locational figures: lines, triangles and polygons. In the case of a locational triangle two raw-material sources and one market are connected by straight lines. Starting from the weight of the finished product and the weight of the two raw-materials, thus excluding ubiquties, the point of minimum transport costs can be calculated mathematically or geometrically. Generally, industries with a high material index are attracted towards the raw material source. If the material index is less than one, and consequently the locational weight less than two, the location is at the place of consumption. Pure materials can never draw industry to the raw material deposits, but weight-losing materials will do so if, and only if, the material index which the raw materials co-determine is greater than one, and if their weight is greater than or equal to the weight of the finished product plus the weight of the rest of the localized materials used.⁴

⁴Ibid., pp. 55-61.

Weber was heavily criticized on grounds that transport costs and rates cannot always be handled by a transformation into weight and distance. It was shown that Weber's procedure was inconsistent with the construction of a locational polygon.⁵

In modern works more realistic analyses have been used.⁶ Isard performs his analysis under two simplifying assumptions. Firstly, a firm's production does not influence the place of consumption, transport rates, prices of raw materials, labour, capital and land, prices of other products, agglomeration economics and other locational variables. Secondly, a firm's action does not provoke retaliatory measures by other producers.⁷

As an illustration of Isard's procedure, a simplified example can be given in the form of a Weberian locational triangle, with C as the locus of consumption and M_1 and M_2 raw material deposits (Fig. 4). For each possible distance from M_1 a transformation line between C and M_2 can be drawn. The transformation line would then be shifted with varying distances from M_1 (Fig. 5). Thus, for each locational triangle three transformation lines can be drawn. Similarly, if a third raw material deposit is introduced, the added distance between two points is held constant and a transformation function between the

⁵Walter Isard, Location and Space-Economy, p. 109.

⁶Bertil Ohlin, Interregional and International Trade, p. 183; E.M. Hoover, The Location of Economic Activity, p. 29; Isard, p. 91f.

⁷Isard, p. 95.

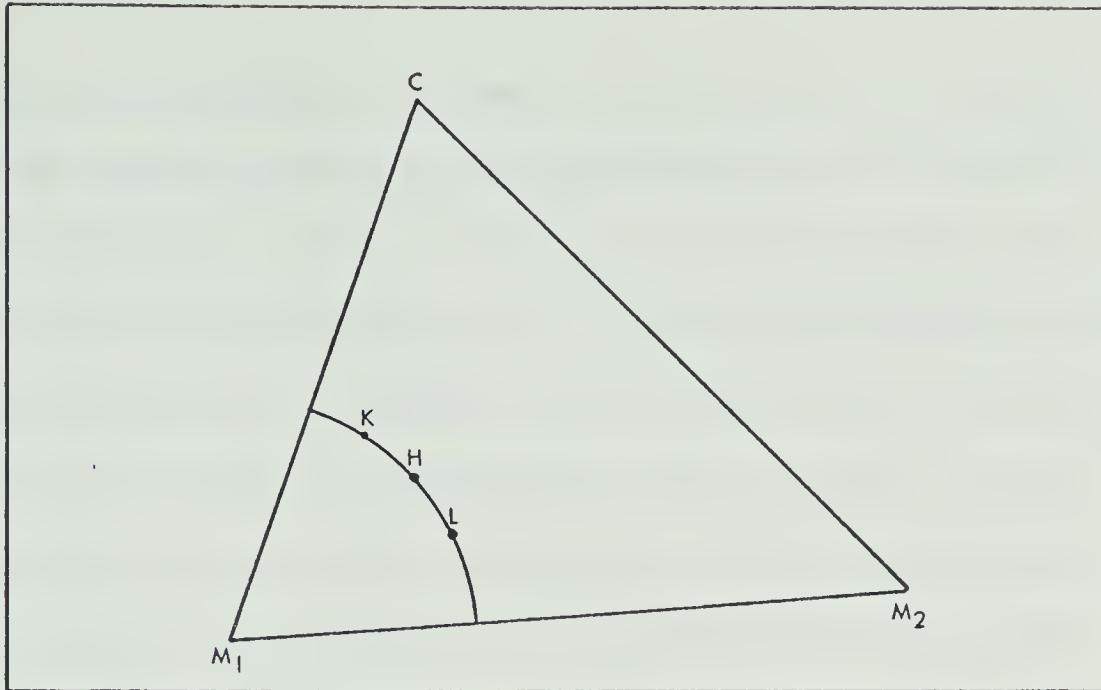


Fig.4 A Weberian locational triangle.

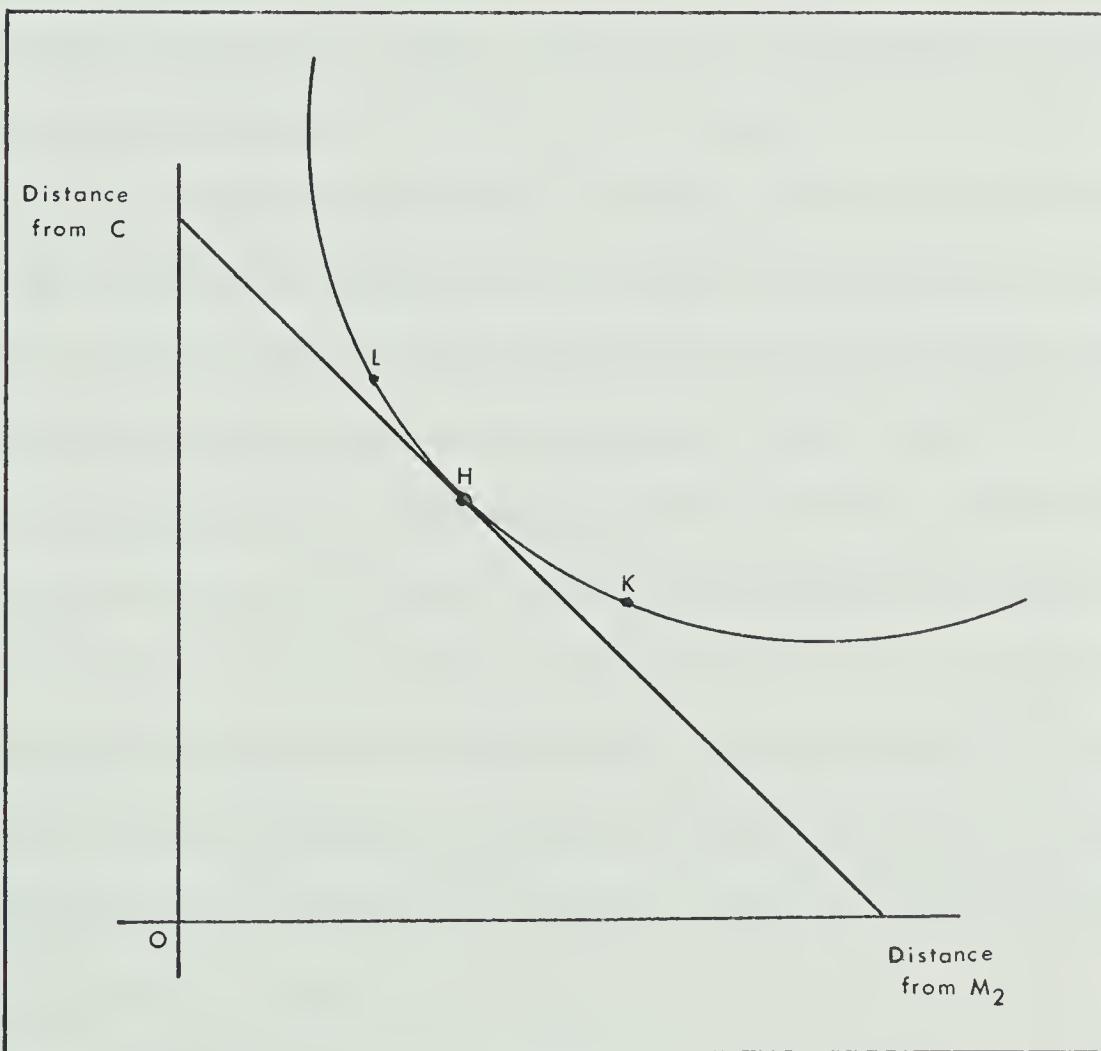


Fig.5 Partial locational equilibrium.

two remaining locations can be drawn. All distances are variables, although the values of all but the relevant two are restricted by a total cost condition. The above analysis is conducted under the assumption of transport facilities of a uniform cost character existing in all directions from all points. Isard further showed how allowance could be made for limited transport facilities, in which case the transformation line would be broken, not smooth. Costs of prices can also be easily handled in the analysis. If the distance from M_1 and the distance from M_2 and the transport rates are known, a price line or an iso-outlay line can be drawn and a partial equilibrium reached at H (Fig. 2). If then the distance from M_2 is fixed, a similar partial equilibrium is reached for M_1 and C. A new transformation line can be drawn between M_1 and M_2 , and by continuous readjustments a general equilibrium can be achieved. Further, if transport rates are not linear, this is merely handled by an iso-outlay line convex to the origin. The first-order condition for partial equilibrium is that the marginal rate of substitution between two transport inputs equals the inverse of the price ratio, and the second-order condition that at the point of tangency, the transformation line be more convex to the origin than the iso-outlay line. If they are irregularly convex, especially if the iso-outlay line is more convex than the transformation line, the equilibrium point is likely to be at an end point,⁸ as in this case cost can always be decreased by moving away from the point of tangency. Due to the convexity of both the transformation curve and

⁸Ibid., pp. 98-112.

the iso-outlay line, this movement would not stop until an end-point is reached, that is, depending on the circumstances, location would be either at the market or at one of the raw-material deposits.

Isard also demonstrated how the analysis can be extended to cover other variables than merely distance. The amount of raw materials used may vary with the location, especially if raw material sources of different quality are used. A transport input can be defined as the movement of a unit weight over a unit distance. The prices would, for example, be expressed as rates per ton mile. If the weight requirements change, the iso-outlay lines merely shift, the slopes being the same, while the transformation lines change. The disadvantage with this type of analysis is that there are two factors which cause a shift of the transformation line: a change in weight requirements or a change in the distance variable. It is impossible to distinguish between them in the locational figure.⁹

The main analytical criticism against the above approach is its partiality. The basic question is whether one of the factors influencing industrial location can be analysed in isolation. The locational outcome can probably be seen as the result of an interaction of many factors. A general equilibrium analysis seems more justified. This issue will be discussed further below.

As to the Weberian tools of analysis, empirical evidence has cast some doubt on their usefulness. According to Weber, the material index should give an indication whether an industry is raw-material-oriented or market-oriented. As mentioned above, if the index is greater than

⁹ Ibid., pp. 113-119.

one, production tends to be drawn towards the raw-material deposit, if less than one geared towards the market. Smith, in a work based on census of production figures from 1948, showed that the material index is a very inaccurate tool of analysis.¹⁰ In his study, all industries located at a raw-material deposit had a material index greater than one, but not all industries with a material index greater than one had a raw-material location. According to the author, a material index between one and five is no indication of whether production is raw-material oriented or not. The reason for this is partly that no allowance is made for differences among industries in the share of transport costs in total production costs. Further, if the raw material sources are strongly concentrated, while the market is spread, a definite cost advantage could exist at the raw-material source, even though the material index indicates otherwise.¹¹

Lindberg, in a 1950 Swedish investigation "Studies in the Location of the Paper Industry," utilized the material index despite being aware of the limitations of this tool of analysis.¹² Lindberg also tried to estimate the importance of transport costs for the paper industry. He found that their regional variations constitute seven per cent of the total costs, which in a recession might be of considerable importance.

¹⁰W. Smith, "Location of Industry," in Readings in Economic Geography. The Location of Economic Activity, ed. by R.H.T. Smith, E.J. Taaffe and L.E. King, 1968, pp. 105-115.

¹¹SOU 1963:49, Aktiv lokaliseringspolitik, Bilaga 1, pp. 155-156.

¹²Olof Lindberg, "Näringsgeografiska studier över den svenska pappersindustrins lokalisering, A och B." Geographica nr 23.

The possibilities of transport costs influencing the location of industry have probably decreased considerably since Weber presented his theories. Partly the improved transport and distribution facilities have made it possible to transport goods over long distances at given costs, and also, at least in some industries, the production techniques require lower quantities of raw materials. More recent investigations have confirmed this trend. In a British study by Cameron and Clark, published in 1966, the most important determinants of area and site choice were given as in Table 3.¹³ Their data were based on questionnaires and interviews and involved fifty companies. Thirty-seven per cent of the companies mentioned transport facilities for goods as an important factor, but only one firm as the most important factor.

Similar results were obtained in the Swedish locational investigations. Backlund in his "Freight Reduction for Norrland's Industry as a Locational Measure" published data based on interviews of twenty-five companies in northern Sweden.¹⁴ The question posed was the relative importance of three different aspects of the locational factor. As seen in Table 4, the additional transport costs of a location in Norrland were not considered to be of great significance.

Part of Gunnar Törnqvist's extensive study was concerned with

¹³G.C. Cameron and B.D. Clark, Industrial Movement and The Regional Problem.

¹⁴Lars Backlund, "Fraktreducering för Norrländsk Industri..." Aktiv lokaliseringpolitik, Bilaga 2.

TABLE 3
THE MOST IMPORTANT DETERMINANTS OF AREA/SITE CHOICE¹⁶

Factor	% of Companies mentioning Factor	Number of Companies mentioning Factor as First or Second Most Important Factor.
Supply of Trainable Labour	80	21
Local Authority Cooperation	58	6
Accessibility of Main Market(s)	44	12
Ready-built Factory	38	11
Transport Facilities for Goods	37	1
Accessibility to Suppliers	32	6

TABLE 4
FACTORS ACTING AGAINST A LOCATION IN NORRLAND¹⁷

Negative Grading	Lack of Personal Contact			Transport Time			Additional Transport Costs	
	Number	% of Answers	Number	% of Answers	Number	% of Answers	Number	% of Answers
I	16	64	1	4	6	24		
II	3	12	8	32	9	36		
III	3	12	10	40	7	28		
No signif.	3	12	6	24	3	12		

¹⁶Cameron and Clark, p. 164.

¹⁷Backlund, p. 140.

the possibility of transport costs influencing the location of industry.¹⁵ This part of his investigation was based on interviews with twenty-four firms located in various regions of Sweden, and was performed in the period 1961-1962.

Törnqvist defined "transport-oriented" and "footloose" industry in terms of the economic cost effect of a possible movement of a production unit in comparison with actual raw material sources and markets. If the effect was large, the production unit was said to be transport-oriented, if not, footloose. Some results of his study are compiled in the chart below (Table 5). Columns c, d, and e denote the differences in cost in per cent between the lowest and highest transport cost locations in the country. For example, in case 1, the transport cost variations inside the country reach 188 per cent; they are largest for the transport of raw materials (440 per cent), and are considerably lower for finished products (111 per cent). The difference is due to the raw material sources being concentrated while the market area is extensive. The opposite is true in case 2.

To give a better picture, these data should be seen in relation to total production costs. As Table 5 shows, the raw-material transport costs are negligible in relation to total production costs in cases 1-3, but not so in cases 7 and 8. Column o gives a general indication whether the production is transport-oriented or footloose, the industries being ranked from footloose to transport-oriented. Generally, an increase in total production cost of 1 per cent could be

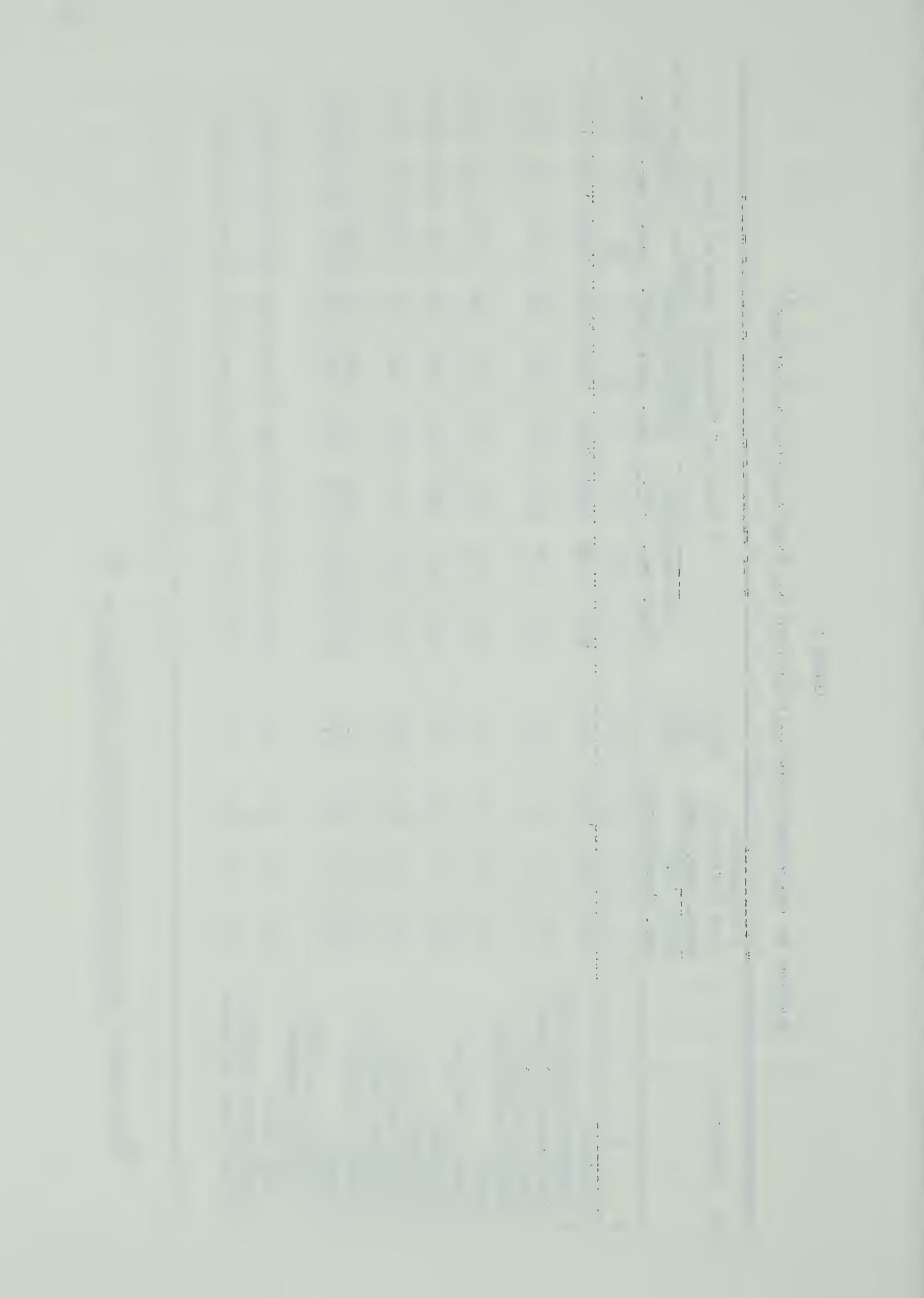
¹⁵ SOU 1963:49, Aktiv lokaliseringspolitik, Bilaga 1.

TABLE 5

RESULTS OF TRANSPORT COSTS CALCULATIONS FOR NINE SELECTED INDUSTRIES¹⁸

No.	Industry	% transport cost difference betw. min. & max.			Mater-ial index			% Share of Transport Costs of Total Production Costs			min. max. diff.	min. max. diff.		
		Raw-mat.	Fin. Goods	Total	g	h	i	j	k	l				
										min. max. diff.	min. max. diff.			
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
1.	Textile	440	111	188	1.2	0.16	0.84	0.68	0.50	1.05	0.55	0.66	1.89	1.23
2.	Heavy machinery with high commercial value	273	493	277	1.3	0.38	1.40	1.02	0.26	1.55	1.29	0.78	2.95	2.17
3.	Heavy and bulky durable consumption goods	421	118	176	0.9	0.46	2.38	1.92	1.25	2.71	1.46	1.85	5.09	3.24
4.	Heavy china and clay goods	180	151	150	1.2	1.11	3.11	2.00	1.36	3.41	2.05	2.61	6.53	3.92
5.	Vegetable and fruit preserving	199	114	116	0.6	1.37	4.10	2.73	3.95	8.46	4.51	5.81	12.56	6.75
6.	Vinegar, mustard & similar products	306	109	134	1.1	2.50	10.16	7.66	3.32	6.95	3.63	7.32	17.11	9.79
7.	Starch	241	114	215	16.5	11.84	40.43	28.59	1.50	3.22	1.72	13.85	43.65	29.80
8.	Building materials with high commercial value	217	78	120	1.2	10.06	31.87	21.81	13.80	24.50	10.70	25.60	56.36	30.76
9.	Insulation material for building purposes	325	97	168	1.6	6.57	27.93	21.36	13.38	26.41	13.03	20.30	54.35	34.05

¹⁸ SOU 1963:49, Aktiv lokaliseringsspolitik, Bilaga 1, p. 276.



considerable in terms of money value, but as the situation is and has been in post-war Sweden, the labour cost variations have had a far larger influence. Törnqvist estimates that one-third of the firms in the industrial statistics are footloose from the aspect of transport costs. They would employ approximately half of the total employment force and represent one-third of value added.

The transport-oriented industries can be further divided into raw material-oriented and market-oriented industries. By comparing columns i and l in Table 5, some indication is given as to whether an industry is raw material or market-oriented. Raw material-oriented industries work bulky primary raw materials and include such operations as iron and steel works, saw mills, cellulose factories and some food factories. Generally, the condition for an industry being raw-material-oriented is that the raw material sources are fairly concentrated in space.

Market-oriented industries are more common. Cement and brick factories, breweries and dairies belong to this category. They tend to be concentrated in larger and fewer units. For industries oriented to the local as opposed to the national markets, high transport costs have the same effect as a tariff protection.¹⁹

The conclusion drawn from the above analysis and evidence is that transport cost is an important factor in influencing the location of the production site for relatively few industries, notably where

¹⁹ See Lars Backlund, "Frakt reducering för norrländsk industri..." SOU 1963:62, Aktiv lokaliseringpolitik, Bilaga 2.

transport constitutes a large share of the relative production costs. The effect, however, can be rendered negligible by the influence of other factors such as labour costs.

2.2. Labour Costs

Among the processing costs, Weber paid most attention to labour costs, which he thought, under special circumstances, would have some influence on the location of industry. If the savings in labour costs were greater than the increase in transport cost, the industry would move to the labour location.

Weber, in analysing the influence of the cost of labour, introduced the concept of isodapanes. Isodapanes are basically curves connecting points of equal deviation costs, which can be drawn around the point of minimum transport costs varying in accordance with the material index. The critical isodapane is the curve connecting the points where the increase in transport cost compared to the minimum point equals the savings in labour cost which could be achieved in a low labour cost location.²⁰

In order to quantify the influence of labour, Weber introduced two concepts: the Index of Labour Costs and the Coefficient of Labour. The Index of Labour Costs is only introduced as a provisional measure, the Coefficient of Labour being more precise. The Index of Labour Costs is the amount of labour costs per unit finished product. A high Index of Labour Costs would indicate a large quantity of labour cost

²⁰Weber, pp. 102-104.

available for compression and a cheap labour location would therefore have a large attraction. The Coefficient of Labour can be defined as the relation between the Index of Labour and the Locational Weight; that is the labour cost per ton weight to be moved. The labour-orientation of industries is thus determined by their Labour Coefficient.²¹

Isard revised Weber's approach, which he considered to be unnecessarily complex, and presented an analysis similar to his own treatment of transport costs. To every realistic point on the transformation line for a pair of transport inputs, not only a necessary transport outlay can be assigned but also a labour outlay. An outlay substitution line between labour and transport costs and iso-outlay lines can be constructed. If a labour location lies on a lower iso-outlay line than all the others, the firm will shift to the cheaper labour site.²²

Less empirical research has been presented on the influence of labour cost than on the influence of transport cost on the location of industry. Smith, in 1955, calculated the raw-material weight per industrial worker in different British industries.²³ He found that industries with a high raw material weight per worker are almost

²¹Ibid., pp. 107-111.

²²Isard, pp. 127-131.

²³W. Smith, "Location of Industry."

exclusively located at the heavy raw material deposits. Industries with low raw-material weight were more mobile and very often located to more advantageous market positions or areas with good supply of skilled labour or low wages.

Törnqvist found that the variations in labour costs between different parts of Sweden were in the order of 15 to 20 per cent, with the lowest wages in southeast Sweden and Gotland, the highest in Stockholm and Gothenburg, the interior and northern parts of Norrland.²⁴ However, as far as Norrland is concerned Backlund found that the wages vary directly with the size of the urban centres.²⁵

For those industries investigated in Törnqvist's study, labour costs constitute 30 to 35 per cent of the total production costs, the total variations between different parts of the country constituting roughly 5 per cent of production costs. Generally variations in labour costs are far more important than variations in transport costs. On the other hand, transport-oriented industries are influenced to a much smaller extent by regional labour cost variations.

As mentioned above, raw material-oriented industries and market-oriented industries are relatively immobile from a locational view-

²⁴ Lars Backlund, "Norrlands industri 1960. En kartering av den industriella sysselsättningen i Norrland," SOU 1963:62, Aktiv lokaliseringsspolitik, Bilaga 2.

²⁵ SOU 1963:58, Aktiv lokaliseringsspolitik, pp. 342-344.

point. For those industries which are footloose from a transportational viewpoint, transport costs constitute a large frame, inside which labour costs could be of considerable importance. On the other hand, there is always uncertainty as to the durability of the regional transport cost disparity.

Recognizing the limitations of his analysis due to his neglect of productivity factors, Törnqvist concluded that variations in transport and labour costs probably were significant in influencing the location of industry only in extreme cases.

2.3. Agglomerative and Deglomerative Factors

Weber did not treat other factors than transportation and labour costs more than indirectly as agglomerative and deglomerative factors, which were dealt with in the same manner as labour costs. If, within the transportation framework, the critical isodapanes of two or more industries intersect, agglomeration will take place in the intersecting area. The critical isodapane is in this case the curve along which the cost deviation from the minimum transport cost point equals the cost saving due to agglomeration.²⁶

Agglomeration factors can be classified in three categories: large scale economies within a firm; localization economies which occur when all firms within a single industry concentrate at a single location and finally urbanization economies, which stem from a higher

²⁶Weber, p. 137.

level of use of the general facilities of an urban structure such as transportation, gas, water, etc. Similarly there are diseconomies which would act as a deglomerative factor, for example, urbanization diseconomies due to rises in the cost of living and money wages, rises in land values and rent, and diminishing returns.²⁷

The total agglomerative or deglomerative influence has not generally been treated separately by different authors. Urbanization economies are obviously relevant. Törnqvist mentions the "industrial milieu" as an agglomerative factor. William-Olsson and Fries investigated in 1950 the industrial development inside the Halmstad-Nässjö railway traffic area. They found that new industrial units, to a very large extent, grew up in connection with old ones.²⁸

In Sweden there has been considerable movement of industry away from the big cities, either through complete relocation or through branching. Seventy per cent of the firms interviewed in Törnqvist's investigation attributed this movement to the lack of skilled labour. The availability of skilled labour as a factor influencing the location of industry will be treated in a separate section below.

2.4. Other Cost Factors

The historical importance of energy resources such as coal and

²⁷ Isard, p. 172.

²⁸ SOU 1963:49, Aktiv lokaliseringpolitik, Bilaga 1, pp. 104-112.

water in affecting industrial location is well-documented.²⁹ The development of transport and production techniques and the introduction of oil has decreased the influence of coal. Efficient power transmission has also made negligible the influence of other energy resources, except for some establishments such as electro-chemical plants, iron and steel works and cement works.

As regards capital, Greenhut listed a threefold significance in location theory.³⁰ Firstly, the availability and the cost of capital to the consumer and the supplier to the locating company is important in the selection of a site. Secondly, the availability of funds is a prerequisite for prosperous business. Thirdly, the cost of funds must permit competitive pricing. In general, Greenhut concluded that for larger companies, capital is seldom a determining force, or only indirectly through the availability of credit to the consumer and the supplier. For a small plant, the availability of loan capital is not a decisive factor but certainly a limiting factor.

Rent can under certain conditions be an important locational factor. The higher the rent, the more intensive the land use. There is always a ceiling rent above which the firm could not remain in business on the site.³¹ Especially in large cities, this situation

²⁹Eli F. Heckscher, An Economic History of Sweden.

³⁰M.L. Greenhut, Plant Location in Theory and in Practise. The Economics of Space, p. 136.

³¹Hoover, p. 72.

would not be uncommon. An example of a chemical plant where the cost of land and building was the decisive factor is mentioned in Greenhut.³² However, the high cost of land in cities can be partially or fully offset by the large urbanization economies that can be gained. For empirical evidence on the influence of the availability of a suitable production site or building, see Table 6.

2.5. Market Factors

The Weberian analysis is grossly at fault for neglecting the demand side. Apart from this omission, regional cost analysis can never be complete, as it is assumed that the total cost at alternate sites is known and can be quantified. The assumption is also that costs do not change after an industry has located at a site, which is hardly realistic.

Lösch was one of the first to criticize Weber and his followers for being too narrow in outlook.³³ It seems obvious that a firm would locate where the profits are the largest. As profits do not only depend on production cost, more emphasis should be placed on the regional variations in demand and competitive conditions. Examples of authors who exclusively analyse the demand side are Hotelling and Chamberlin.³⁴

Following Lösch, it is assumed that the buyers are evenly spread over a large market area. There are a number of producers producing

³²Greenhut, p. 203.

³³A. Lösch, The Economics of Location.

³⁴E. Chamberlin, The Theory of Monopolistic Competition, and H. Hotelling, "Stability in Competition," Economic Journal XXXIX 1929, pp.41-52.

TABLE 6

LOCATION FACTORS AS LISTED BY 792 INTERVIEWED COMPANIES IN SWEDEN³⁵

Column A: % of Total Number of Questionnaires on Which Factor is Listed
 B: % Distribution of Marks on the Different Locational Factors

Industry*	1	2	3	4	5	6	7	8	9	10	11	1-11
Given Location Factor	A	A	A	A	A	A	A	A	A	A	A	B
Available build. or suitable site	54.0	13.9	49.2	81.8	76.2	43.2	52.8	48.9	53.3	51.4	25.8	
Good supply of labour	47.4	33.3	39.3	63.6	19.0	25.0	67.4	72.3	40.0	49.9	25.0	
The locational site the home of the entrepreneur	25.8	19.4	27.9	9.1	23.8	9.1	25.8	27.7	23.3	24.4	12.2	
Good communications	22.2	22.2	16.4	9.1	23.8	22.7	20.8	21.3	23.3	21.2	10.7	
Proximity to market	17.5	41.7	6.6	9.1	33.3	34.1	4.5	6.4	20.0	15.4	7.7	
Proximity to the raw material source	100.0	3.6	47.2	29.5	45.5	0.0	36.4	6.7	8.5	10.0	11.5	5.8
Municipal aid	13.9	2.8	14.8	9.1	4.8	2.3	7.9	17.0	10.0	11.1	5.6	
Good service facilities	7.2	5.6	3.3	0.0	4.8	9.1	3.4	6.4	6.7	5.8	2.9	
Other Factors	8.6	16.7	19.7	36.4	0.0	4.5	4.3	6.7	8.5	4.2		
Total	100.0	200.2	202.8	206.7	263.7	185.7	186.4	193.8	212.8	193.3	199.2	99.9

*Industry 1 is mining, 2 metal and mechanical, 3 stone, 4 wood and furniture, 5 pulp and paper,
 6 printing, 7 food, 8 beverage and tobacco, 9 textile and clothing, 10 leather hair and rubber,
 11 chemical and technical.

a homogenous or standardized product. The buyers are indifferent between the products. The procurement and processing costs are the same regardless of location. Marginal cost and profit are also identical. The buyers are paying the transport costs. Every producer is capable and willing to sell to the whole market. The competitors can locate or relocate their production to all parts of the market at the same cost.

If demand is completely inelastic, the location has not influenced the sales of an individual producer. All producers might locate in the middle of the market from where it is easiest to reach all the customers. If demand is elastic, the competitors will spread, the distribution costs will be minimized and sales maximized. A pattern of regionally-bounded market areas will be formed. When the number of producers is sufficiently large, and transports take place over a homogenous surface with an evenly spread market, there will emerge a regular pattern of hexagons. By changing some of the assumptions regionally-bounded market areas of different form and size might emerge. The boundaries are usually not very well defined and overlaps are common.

Törnqvist tried to incorporate the need for contact with the market into his analysis, which obviously comes under the heading of a demand factor (see Table 6, page 48). Transport costs and labour costs are easily quantifiable, but the effect on total sales of near contact with the customers is hardly possible to quantify. In recent times so-called spatial potentials have been used. Starting from the individual site, an estimate of the influence of the surrounding

area is given in the form of, for example, population potentials. The population potential is a numerical expression of the possibilities of reaching the whole population from a certain site. Every individual in the whole area under investigation constitutes an addition to the population potential of the place. This addition gets smaller, the farther from the site the individual is. If the market is proportional to the population, the population potentials can be used as market potentials. A market potential would then be a measure of the possibilities of reaching the whole market from a certain site.³⁶

Dunn, in 1956, constructed an index of location which could give an approximate answer to what would be the most advantageous site of location, the one with the lowest transport cost or the one with the highest market potential.³⁷ Törnqvist did not think it was possible to apply that or a similar index to the Swedish case due to lack of information. He further stated that the need for contact is likely to vary considerably between industries, and that the market factor had been stressed repeatedly in his talks with entrepreneurs.

Lars Backlund's investigation confirmed the importance of contact with the market as seen in the table presented on page 37. The interviewed representatives of the firms were of the opinion that personal contact difficulties were of more serious consequences for

³⁶ SOU 1963:49, Aktiv lokaliseringspolitik, Bilaga 1, pp. 361-364.

³⁷ E.S. Dunn, "The Market Potential Concept and the Analysis of Location," Papers and Proceedings of the Regional Science Association, Vol. 2, 1956, pp. 66-75.

a firm at a location in Norrland than an increase in transport costs. In the results of the Glasgow University Inquiry, accessibility to the main markets also received a prominent place. Forty-four per cent of the interviewed companies mentioned it as an important factor (see Table 3, page 37).

2.6. The Availability of Skilled Labour, Taxation, Local Authority Cooperation and Personal Factors as Influences on Industrial Location

The availability of skilled labour has emerged as one of the most important factors behind a locational decision (see Tables 4 and 6). In Törnqvist's investigation 50 per cent of the interviewees listed this as an important factor. The factor is of considerably less importance in the large urban regions. If these are excluded, the availability of labour becomes the dominant factor (70 as opposed to 50 per cent of the interviewees list it as important).

Greenhut treated the influence of tax incentives and came to the rather negative conclusion that tax incentives are at best a relatively unimportant secondary factor of location. But given the overall deciding factor, the tax incentive may induce a specific location within the area defined by the basic factor.³⁸

Local authority cooperation was listed as one of the most important factors in the British study. As seen in Table 3, 58 per cent listed this factor as important.

The provision of executive and operative housing, flexible options on developable land, cooperation over planning permission, the provision of temporary sto-

³⁸Greenhut, p. 139.

rage and production space, all of these were often taken as indications of the future relationship between the industrialist and an efficient local authority - the lack of cooperation at the decision stage, or the impression given of being one industrialist amongst hundreds who visited the site acting as a distinct reason for not establishing a unit.³⁹

In Törnqvist's study 11 per cent listed aid from the municipalities as an important factor (Table 6).

Purely personal considerations also play some part, especially in the locational decision of the small firm.⁴⁰ It might be quite natural to start production in the hometown without even considering alternative sites (see Table 6).

2.7. Summary and Conclusion

It could be argued that in the past most discussions of plant location overemphasized the importance of transport and processing costs, which was followed by a similar overemphasis on demand factors with some authors. Subsequently, location theory has been moving towards an emphasis on the site which offers the largest profits. Following Greenhut, it can still be maintained that locating factors are divisible into demand, cost and purely personal considerations.⁴¹

Several attempts have been made at formulating a mathematical theory of the locational decision from the point of view of the indi-

³⁹ Cameron and Clark, p. 201.

⁴⁰ Greenhut, p. 279.

⁴¹ Ibid., p. 279.

vidual firm, for example in works by Isard, Orr, and Danielson.⁴²

Danielson's article is interesting since he treats the whole problem of location as a stage in the choice between alternative investments, and presents an investment calculus in traditional fashion. Danielson, even though he did not use it himself, also recognized the possibility of application of game theory, since it is feasible that a company may choose a location to hinder a competitor.

However, in many cases it cannot even be assumed that the choice of a site is preceded by rational calculations of the profitability of alternative sites. This especially applies to new establishments. At relocation of existing units and branching, the decision to move is usually preceded by a definite idea that a new site is more profitable.

In evaluating government policy it should therefore be kept in mind that the locational decision is not the outcome of one all important factor, but rather the outcome of the complex interplay of a number of factors. The need for further research is urgent, a fact which was emphasized in the Swedish Government proposal.

⁴² Isard, Location and Space Economy; E. Orr, "A Synthesis of Theories of Location, Transport Rates, and of Spatial Price Equilibrium." Papers and Proceedings of the Regional Science Association, Vol. 3, 1957, pp. 61-74; Albert Danielson, "The Locational Decision from the Point of View of the Individual Company," Ekonomisk Tidskrift 66 (1964), h. 2, pp. 47-87.

CHAPTER 3

A GENERAL DISCUSSION OF GOVERNMENT INDUSTRIAL
LOCATION POLICY

3.1. Approaches to Location Policy

The fact that the government can exercise influence on many of the factors determining the location of industry is fairly obvious. It can provide adequate transport facilities, regulate the transport rates, influence wages and labour mobility. It can create an environment beneficial to industry in general by providing an adequate supply of service facilities and it can influence the availability of land and capital. It can, by its own purchases and location of government agencies, have a considerable influence on demand. It can also influence attitudes and ideas through information and promotion campaigns.

One of the most crucial issues before deciding upon a location policy is for the government of a country to clearly identify what the relevant problems are, exactly what they will try to achieve by a location policy, and then the best method of achieving the established aim. In trying to decide what policy is appropriate, especially the long term goals of the overall economic policy should be kept in mind, such as the attainment of full employment, the maintenance of a stable currency, economic growth and a viable balance of payments. The evaluation of the costs and benefits of a location policy in economic

terms is particularly difficult, since so many costs and benefits are noneconomic. A location policy might be initiated for entirely political or social reasons.

Hoover lists three main approaches to location policy.¹ The first is a policy of encouraging flexibility in the economy. It is basically a policy of laissez-faire, of belief in the working of the market mechanisms. Evidences of self-equilibrating location tendencies are abundant, for example, the migration of enterprises and people to places promising greater rates of returns, the allocation of land to the use that can yield the greatest net return per acre. But as the ideal state of perfect competition is never achieved, it is also a policy of easing the way for the market mechanism, what Hoover calls "lubrication." Some measures of lubrication are the encouragement of labour mobility, the supply of information on locational alternatives, the removal of trade barriers, and the outlawing of certain monopolistic practices.

The second approach to location policy is to encourage an industrial pattern that has more inherent balance and stability and requires less violent adjustments of specialized areas and persons. The previous policy seeks to alleviate locational maladjustment by easing the process of adaptation while the latter policy is a deliberate attempt of reducing the amount of locational change. It is basically a policy of minimizing the need for migration. Measures

¹Hoover, p. 265.

following this approach would encourage the conservation of resources, such as the maintenance of the productive powers of sustainable resources and a not-too-rapid exploitation of exhaustible resources. Further, if a producing area is beginning to lose in terms of competitive position, it could be helped by subsidies, tax concessions, special transportation rates, government preferences in allocation of supply contracts and government support in refinancing.

Lindbeck in a discussion of the Swedish location policy also points out that in trying to develop a backward community the government can try to compensate for lack of natural resources by attempting to remove differences in production costs arising from a small endowment of facilities.² The government can further compensate for lack of external economies or even create external economies.

Locational stability could also be achieved by an active promotion of diversification of the economy in certain areas. The benefits of diversification are listed by Hoover as stability of income and employment through the evening out of seasonal fluctuations, less probability of a regional collapse of employment, and easier replacement of a declining industry.³ Further, it would encourage fuller use of complementary labour groups and foster better political and social relations within and between areas of diversification.

² Assar Lindbeck, "Location Policy," Skandinaviska Banken Quarterly Review, May 1963, p. 43.

³ Hoover, p. 285.

The third approach to location policy that Hoover mentions is a policy geared to national defense purposes, which for example would involve encouragement of industry to locate in areas less vulnerable to enemy attack.

The location policy of a particular country does not usually fall under one of these headings, but is a mixture of all three approaches with perhaps more emphasis on one than the others. In practically all Western European countries and North America, the government has taken measures to stimulate the economic development in areas with an unsatisfactory employment and income situation. A short account will be presented of the government measures in Norway, Finland and Canada, due to the special problems of the north that these countries are facing. Great Britain will be included because of its pioneering efforts in the area.

3.2. Location Policy in Norway

In Norway, the discussion of measures to support the expansion of some economically weakly developed areas played a prominent part after the war. In 1952 a development program was started for northern Norway which was facing problems similar to those of northern Sweden. In 1956 the program was extended to other parts of the country as well.

Government help is generally given in the form of loans and government guarantees to industries in all areas with employment difficulties. Special measures for northern Norway are the establishment of a particular development fund, special tax relief measures and

extra allocations in the budget to public works and service, such as roads, training schools, geological exploration, and research.

The result of the policy as regards northern Norway was an employment increase of 12 per cent from 1952-1960, double that of the rest of the country. The employment in industry increased by 36 per cent as opposed to 6 per cent in other parts of Norway. Its share of the national product increased from 7.1 per cent to 7.9 per cent in the period 1950-1957.⁴

3.3. Location Policy in Finland

Considerable research and planning since the early 'fifties' has been undertaken to promote economic development, particularly of northern Finland. It is laid down in special legislation that industries establishing in northern Finland are exempt from income tax during the first four years of operation. Further, if a company situated in the north expands or renew its machinery so that capacity is increased, it has the right to deduct for four years from its taxable income a sum not higher than 3 per cent of the procurement cost of the new equipment. Goods that are processed in northern Finland also get a reduction of export fees of 50 per cent. Loans are given to industries in areas with unemployment.⁵

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SOU 1963:58, Aktiv loakliseringspolitik, pp. 298-302.

⁵

Ibid., p. 304.

3.3. Location Policy in Canada

The present Canadian federal location policy was started in 1965 with a new "Designated Area Program" under the "Area Development Incentives Act" of June 30, 1965. This new program offered cash grants instead of the previous income tax incentives to manufacturing and processing industries establishing or expanding within a designated area. To qualify as an area, there has to be either high and chronic unemployment or low family income. There are detailed regulations as to the required amount of the unemployment and income. Such areas are situated in all the ten provinces and contain 16 per cent of the national labour force. Notably the sparsely populated northern parts of Canada are specifically excluded from the Program.

There are three main benefits available under the Area Development Program. An industry can be allocated a Development Grant in the form of cash or an equivalent tax credit of up to one third of the capital cost of new machinery, equipment and new buildings. The grant is exempt from federal income tax and has no influence on the amount of capital cost which may be used for tax purposes. Another benefit is Accelerated Capital Cost Allowance of up to 50 per cent per annum, straight line, on new production machinery and equipment. Further, Accelerated Capital Cost Allowances are given, covering up to 20 per cent per annum "straight line" on new buildings and significant extensions to existing buildings.⁶

⁶News Release, Department of Industry, Ottawa. Area Development Program Announcement, Aug. 5, 1965, pp. 1-5.

In October 1966, the policy was reported to have resulted in an investment of 1,235 million dollars in new and expanded industrial plant and 41,212 new employment opportunities.⁷

3.4. Location Policy in Great Britain

The British location policy was initiated for reasons similar to that of Sweden in an attempt to alleviate regional unemployment caused by structural changes in the British economy. It was initiated in the 1930's and has been followed by several government acts: "Distribution of Industry Acts." They were followed in 1960 by a new law, "The Local Employment Act," which was to last for seven years. The areas qualifying for aid were named Development Districts or more recently Growth Areas. The criteria utilized to classify a region as a Development District were not specifically defined apart from a general regulation about areas which have or are threatened by a high level of unemployment. The Areas are determined by the Board of Trade.

Government aid takes several forms. One is government erection of industrial buildings for future renting or selling to individual companies. Further, the government can give loans and direct grants to an industry building in an assisted area. The grant constitutes 25 per cent of the expenditure on the building of a new plant and 10 per cent of the cost of equipping the new plant. In 1963, free depreciation allowances were given to all companies operating within the

⁷"Industrial Plan Showing Results," The Edmonton Journal, Oct. 31, 1966, p. 25.

assisted areas. Moving grants are given to workers in an attempt to increase labour mobility. Grants and loans can also be given to local authorities or industries for improvement and extension of local roads and streets; for the erection of residential buildings, and for investment in water and sewage. The Board of Trade also have to give permission for the erection or expansion of any industrial building exceeding 5000 square feet. Consequently, building permission is very seldom given in areas experiencing economic expansion. The latest measure dates from 1967 and is an employment premium paid to manufacturing firms in the Development Areas for each employee on the payroll.⁸

In six years of encouraging industrial mobility, there has been an estimated creation of 64,000 jobs in the assisted areas, as compared with an estimated total of 130,000 jobs created by government action such as mobility schemes and promoting expansion by existing assisted area producers. Cameron and Clark point out, however, that despite all the government efforts, the decline in basic local industries have largely offset these efforts.⁹ A survey conducted by the Economist of conditions in northeast England, which is and has been one of the most problematic areas in Britain in terms of local unemployment, agrees with Cameron and Clark on the inadequacy of

⁸SOU 1963:58, Aktiv lokaliseringspolitik, pp. 278-290.

⁹Cameron and Clark, p. 205.

government efforts to solve the unemployment problem. In the survey evidence is also presented, which indicates that the region is on the threshold of expansion. The authors infer that this is to some extent due to the government location policy.¹⁰

Some of the results of the study by Cameron and Clark have been given in Chapter 2. One of their most interesting findings, however, concerned so-called second-best decisions.¹¹ In terms of impact on employment the most important moves were undertaken by twenty-nine large companies who initially wished to expand and develop in non-assisted areas. After having been refused building permission for in situ or localized development, negotiations were undertaken with the Board of Trade on development in an assisted area, and the companies were persuaded to open assisted area plants. Half of the companies were certain that despite government aid, the enforced decision to locate in a development area was a second-best only.

They listed three reasons for this. In the first place, the establishment of an assisted area plant would involve plant, machinery and staff duplication, which would raise the long-term overhead costs. In the second place, transport costs would be increased, and so would labour costs in the short run due to the lower productivity. Thus, any reduction in factor prices such as factory rents and land costs

¹⁰Nicholas Harman and Elizabeth Burney, "The Northeast Ready to Go - A Survey by the Economist," The Economist, Aug. 1968, pp. 17-23.

¹¹Cameron and Clark, p. 194.

would be more than offset by increases in operating costs. Thirdly, the overhead expenditure associated with the planning of building and operation of assisted area plants would be far above the costs associated with an in situ extension. New suppliers would have to be contacted, negotiations undertaken with local authorities and trade unions, and a higher quality of management would also be needed at the inception of the new plant.

The remaining companies, while preferring in situ extension had no particular objection to establishment in an assisted area. It appeared from limited evidence that the companies that were least reluctant to establish branches in the assisted areas were the engineering and electrical goods companies. This could be partly explained by cost factors. Presumably where transport costs as a percentage of total production costs are small and the net value added per worker high, the disincentives to separating producing units are low. However, Cameron and Clark conclude that a far more important factor is the attitudes of management towards moving to an assisted area.

Their conclusion as to the effectiveness of government policy is of certain relevance to the Swedish case. They argue that industrial dispersal cannot be a major method of solving the problems of the assisted areas, particularly the peripheral areas for four reasons. Firstly, the number of manufacturers who wish to expand are always limited and most of their planned developments were such that they could only be diverted to the closely accessible assisted areas. Most of the smaller firms are tied to the local markets or under the control of a small management team who would find it almost impossible to supervise a

distant plant. Secondly, there are always constraints on dispersal due to the need for export expansion or to prevent uneconomic siting, of which the government is aware. Thirdly, the British dispersal program is closely associated with periods of general output expansion and subsequent lack of capacity and labour shortages. As there has not been constant growth of the British economy for more than three consecutive years, due to its termination with anti-inflationary measures, dispersal cannot be a consistent method of preventing localized unemployment. In the fourth place, even though the reduction in immigration to the congested areas and the natural growth of the working population will decline in the near future, which will encourage more companies to develop in assisted areas, it does not necessarily mean that more jobs will be created. It will probably mean that the smaller firms will be forced out of the congested areas. The large employers, as for instance the major motor manufacturers, are not likely to move in the near future. Further, the increasing cost of labour will encourage capital substitution. Firms might also resort to more effective utilization of the existing premises.

Cameron and Clark do not offer a significant alternative or complement to the policy of dispersion, they only bring forward suggestions for improvements in the existing policy.

3.6. Summary and Conclusion

The criteria for receiving government aid in countries with a location policy are extremely variable. High unemployment is the main criterion in Great Britain, Western Germany, the United States, the

Netherlands and Belgium. A weakly developed industrial structure and unemployment are criteria in France, and possibly Denmark and Norway. Low per capita income is the determining factor in the agricultural regions in the United States, low per capita income and/or high unemployment in Canada.

The policies used are of basically two kinds: one is the development of public services in communities to improve the conditions for industry through direct grants or loans to the local authorities. The other is direct support to industries in connection with the establishment, relocation or expansion of industries. In almost all countries, government loans and guarantees are given with favourable repayment conditions. In some countries it is possible to receive investment grants and tax concessions and in Great Britain and Belgium, the state even supplies buildings.¹² Seen against this background the Swedish policy is neither original nor particularly far-reaching.

¹² SOU 1963:58, Aktiv lokaliseringpolitik, pp. 278-312.

CHAPTER 4

AN ECONOMIC CRITIQUE OF THE SWEDISH LOCATION POLICY

4.1. Recapitulation

For the purpose of recapitulation the goals of the Swedish industrial location policy are as follows:

1. To promote such a location of industry that the resources of the country remain fully utilized and distributed to different areas as to maximize the national income and give full employment to the labour force.
2. To create a balanced society which gives people as far as possible regardless of where they live an equivalent standard as regards social and cultural services.
3. To locate industry such as to ease the defense of the country.¹

Government aid is given to the four northern counties and other selected areas in northern Sweden. In other parts of the country, aid is given according to certain criteria: (1) when considerable employment difficulties are anticipated or have arisen as a consequence of an industrial shut down; (2) in connection with branch rationalization or for similar reasons; (3) when special circumstances advocate that a community with undifferentiated industrial structure should get a more diversified industrial life. Aid is only given to projects which provide long-term employment for the labour force and render satisfactory profits. Loans and grants are given to industries at the establishment,

¹SOU 1963:58, Aktiv lokaliseringpolitik, p. 319.

expansion or rebuilding of a plant or other building necessary for the activity. This also applies to the tourist industry. Loans are also given for the acquisition of machines and tools or under special circumstances for the purchase of a building. The total locational aid in the form of loans and grants should not be larger than necessitated by market conditions and costs and does not usually exceed two thirds of the total investment cost.

4.2. A Discussion of the Policy in Terms of Hoover's Classification of Location Policy

In Hoover's terms the Swedish policy would follow the second and third approaches to location policy, i.e. a policy of minimizing the amount of migration necessary and a policy also geared towards industrial defense purposes.² In Lindbeck's language the Location Committee's proposal involves an attempt to compensate for lack of facilities through subsidization.³ For example, the size of financial assistance as regards building costs is of approximately the same magnitude as the difference in building costs between certain towns in northern and southern Sweden. The same interpretation can be given to the proposal for credit guarantees free of amortization for ten years and also to the Committee's special recommendations for Norrland such as 10 per cent lower power costs in the northern regions, negotiations with the oil industry to achieve lower fuel prices and suggestions that private

²Hoover, p. 265.

³Lindbeck, p. 43.

companies should negotiate with the State Railways to obtain lower freight rates. Most of these recommendations were dropped from the government proposal, since the government was opposed to any form of continuous subsidization.

As lack of facilities also tend to lead to low diversification in industrial activity, there is also usually a lack of external economies. When the Committee proposes the subsidization of enterprises in localities with a high level of unemployment and a poorly developed manufacturing industry, it can be interpreted as an attempt to compensate for a lack of external economies.

Compensation for lack of natural facilities and external economies would lead to a misallocation of resources in the long run while actually the creation of external economies would not since it involves an actual reduction in business and overall costs for the economy. This would mean a policy with attention to certain places with development potential, but which for some reason or other, have not developed sufficient external economies. This is completely opposite to the Committee's proposal which implies concentration on Norrland's interior area. This was, as mentioned in Chapter 1, also dropped from the government proposition.

As for the aid given to communities to achieve a more diversified industry to reduce cyclical fluctuations in employment, it can certainly be argued that the sensitivity to fluctuations can only be reduced if a large number of different enterprises locate in the same region, which is hardly a realistic prospect with most of the regions with undiversified economies located in the north of Sweden.

4.3. An Evaluation of the Policy Against the Empirical Findings on Factors Influencing the Location of Industry

In evaluating the policy against the findings of Chapter 2, a few observations can be made. Hoover argued that locational policy should be carefully selected in its application to different industries.⁴ There is no emphasis on this factor in either the Committee's report or the government proposal, apart from the suggestion that industries with "large spread effects" should be encouraged. There is no mention of which industries would be suitable for northern Sweden. It seems obvious that raw-material-oriented industries are the most likely, but according to Törnqvist's findings, those are also the ones that are fairly dependent on transport costs. As Backlund pointed out, a reduction in transport cost would have a detrimental effect on the few existing local market-oriented industries. As for attracting more market-oriented enterprises, this seems hardly feasible with the difficulties in maintaining personal contacts and the general importance of access to market areas and suppliers, which was pointed out in the British investigation.

One seeming paradoxical factor is that by giving grants and loans for the erection of buildings and the purchase of machinery, the government is encouraging capital-intensive production, which is clearly not the intention of the location policy, if they have in mind an immediate relief of the situation. It is possible to introduce an employment subsidy similar to that instituted by the British government. On the other hand, the empirical evidence points to the fact that the avail-

⁴Hoover, p. 246.

ability of labour is a more important factor in influencing the location of industry than the cost of labour.

There was no consideration in the Committee's report of government erection of buildings in the British fashion. Both the British and the Swedish report listed the availability of an empty industrial building as a fairly important locational factor. Subventions to municipalities for the provision of industrial buildings ceased in 1965.

4.4. The Location Policy and Full Employment

One of the major criteria in evaluating the Swedish location policy is to determine whether it complies with the stated goals. Whether the policy achieves the second and the third goal will be left out of the discussion for obvious reasons. The major economic goal is: "To promote such a location of industry...as to maximize the national income and give full employment to the labour force."⁵ As stated in the introduction, full employment is the primary goal of Swedish economic policy, and obviously the purpose of the location policy complies with this goal. It can further be assumed that full employment can be achieved in the whole country if sufficient government funds are channelled into the Development Areas. This does not apply to a situation of general unemployment caused by cyclical fluctuations in the economy. Even if the figures given in Chapter 1 seem fairly impressive, for example, an estimated 14,000 new jobs in Norrland, it is far from sufficient. An investigation for the most northern county of Sweden brings this

⁵ SOU 1963:58, Aktiv lokaliseringpolitik, p. 319.

out.⁶ It is estimated today that the country has an overpopulation of 60,000 people seen against the existing industry. Unemployment affects 20,000 family heads. In 1980, the functional population would be 194,000 people under the assumption of no more industrial activity as compared with an actual population today of 260,000.

Despite the fact that ordinary business criteria have been the guidelines for firms that have located in the Development Areas, some projects have already run into difficulties. This can probably be explained by the 1966-1967 recession.⁷

4.5. Location Policy and Economic Growth

The stated aim of maximization of the national income could certainly be achieved in the short run by the present policy. By utilizing unused social capital and by employing unutilized labour, the national income must increase. Instead of having to pay unemployment benefits or start relief works for the unemployed, they will take part in production and increase national income. As for the utilization of unused social capital, this is not very significant, as was demonstrated by Per Holm in an investigation made for the Committee.⁸ Houses that are empty because of outmigration from a region will not necessarily remain empty. Rents will usually fall until they are occupied again and the

⁶BD 80 Länsutredningen för Norrbottens Län.

⁷For further details on its effect on the Swedish economy, see Erik Lundberg and Lars-Johan Cederlund, "Perspectives on the Latest Recession," Skandinaviska Banken Quarterly Review, Vol. 2, 1968, pp. 49-54.

⁸Per Holm, "Lokala samhällskostnader vid industrilokalisering," in SOU 1963:62, Aktiv Lokaliseringpolitik, Bilaga 2, pp. 263-347.

problem is not serious unless rents fall as far as not to cover variable costs.

Whether the policy would maximize national income in the long run, that is, encourage economic growth, is dubious. In the first place, assuming a fixed supply of labour and capital, every investment that takes place under the location policy limits the resources available for the development of centres with possibly higher development potential in the south of Sweden, and consequently hampers economic growth. Secondly, it is possible that when the demand for capital exceeds the supply, location might take place where credit exists, i.e. in Norrland under the location policy, not where it is most profitable, which would also lead to a misallocation of resources. Thirdly, as mentioned above, the investment grant can be interpreted as a compensation for lack of facilities, and is in effect a continuous subvention in the form of lower future fixed costs. It could be argued that if there were possibilities of profitable operations in Norrland, funds would be available on the free market anyway.

Much of the policy as regards the interior area of northern Sweden is based on the assumption of the forestry industry remaining on a sound economic base. This industry exports approximately 70 per cent of its production, which makes it very sensitive to fluctuations in the world market. Pulp and paper together constitute 75 per cent of the exports of forestry products. The future prospects for these industries are uncertain.⁹ The capacity of the world pulp industries

⁹ See SOU 1966:1, Svensk ekonomi, pp. 160-162.

have experienced a considerable increase, which despite rapidly increasing demand has led to overcapacity and declining prices. This development has had a negative effect on the profitability of the Swedish pulp industry. In addition there is increased competition from the United States and Canada who possess considerable cost advantages because of their rich supply of cheap raw material. There is also a possibility that the Soviet Union might enter the world market in the near future. Fifty per cent of the paper exports go to the Common Market whose tariff walls put a considerable strain on the profitability and competitiveness of the Swedish industry, especially since the tariffs are on paper products. Pulp can be brought in free of customs.

The contention that the location policy is detrimental to economic growth cannot be conclusively proven. Agglomeration might take place and render parts of Norrland low-cost areas. This is particularly feasible with regard to some coastal areas which already have an industrial tradition. As far as the interior parts are concerned, the possibilities of agglomeration seem remote, because of their isolation, lack of industrial tradition, lack of large urban centres and declining population. In general, rapid economic growth requires an efficient allocation of resources. The only way of achieving this is to follow Hoover's first approach to location policy, i.e. encouraging locational change instead of minimizing it, in short, easing the way for the market mechanism by concentrating policy on the faster developing regions and increasing labour mobility. Apart from the social and defense arguments for a location policy, the Swedes seem to think that the encouragement

of labour mobility can never be fully effective, which necessitates an active location policy. "The employment problems have not been solved and it does not seem to be possible to solve them in the future by labour market measures."¹⁰ But if all the money that is now spent on locational measures were diverted to increase labour mobility, it is hard to understand why the policy would not be as effective as the present location policy. Granted that this is not so, it would seem better from an economic viewpoint to encourage industries with limited capital equipment and a short life-span for immediate relief of the situation.

¹⁰SOU 1963:58, Aktiv lokaliseringpolitik, p. 316.

CONCLUSION

Because of its short time since its inception, very little that is conclusive can be said about the success of the Swedish industrial location policy. However, available data indicate that the policy is not sufficiently far-reaching to cure the unemployment problems of Norrland. Further, it is possible that if the policy is not carefully implemented, particularly with regard to the selection of central places to be aided in the Development Areas, the policy might lead to a misallocation of resources, and consequently have a detrimental effect on long-term economic growth. It could be argued contrary to this contention that agglomeration might render Norrland a low-cost area, but in the opinion of this author, this possibility is remote.

From a purely economic viewpoint it is recommended that the unemployment problem of Norrland be attacked by improving the existing labour market policy of increasing labour mobility. It is also recommended that the location policy concentrate on the faster growing areas in southern Sweden, not necessarily the congested large urban regions.

It might be more advisable for the government to rely to a larger extent on social measures and policies to cure social evils than location measures. For instance the government could increase transfer payments to those municipalities in need to compensate for a deficient tax base in financing schools, hospitals and relief works for unemployed labour.

BIBLIOGRAPHY

Public Documents

Canada, Department of Industry, News Release: Area Development Program Announcement, August 5, 1965.

Sweden, Kunglig Maj:ts proposition nr 185 år 1964. Kunglig Maj:ts proposition till riksdagen angående riktlinjer för en aktiv lokaliseringpolitik m. m. given å Stockholms slott den 16 oktober 1964.

Books

Arpi, Gunnar. Sveriges nutida näringsliv. Stockholm: B.A. Norstedt & Söner, 1963.

Cameron, G.C. and Clark, B.D. Industrial Movement and the Regional Problem. Edinburgh: Oliver & Boyd Ltd., 1966.

Chamberlin, E. The Theory of Monopolistic Competition, a Reorientation of the Theory of Value. 6th edition. Cambridge: Harvard University Press, 1962.

Gulbrandsen, Odd and Lindbeck, Assar. Jordbrukspolitikens Mål och medel. Industriens utredningsinstitut. Stockholm: Almqvist & Wiksell, 1966.

Greenhut, M.L. Plant Location in Theory and Practice. Chapel Hill: University of Carolina Press, 1956.

Heckscher, Eli. An Economic History of Sweden. Translated by Goran Ohlin. Cambridge: Harvard University Press, 1954.

Hoover, Edgar M. The Location of Economic Activity. New York: McGraw-Hill Book Company Inc., 1948.

Isard, Walter. Location and Space-Economy. A General Theory Relating to Industrial Location, Market Areas, Land Use, Trade and Urban Structure. New York: The Technology Press of the Massachusetts Institute of Technology and John Wiley and Sons Inc., 1960.

Lösch, August. The Economics of Location. Translated from the 2nd edition by W.H. Woglum. New Haven: Yale University Press, 1954.

Ohlin, Bertil G. Interregional and International Trade. Cambridge: Harvard University Press, 1933.

Weber, Alfred. Alfred Weber's Theory of the Location of Industries.
 Edited by C.J. Friedrich. Chicago: The University of Chicago
 Press, 1929.

Westerlin, Erik and Beckman, Rune. Sveriges ekonomi. Stockholm:
 Bokförlaget Prisma, 1962.

Reports

SOU 1963:49. Aktiv lokaliseringspolitik, Bilaga 1. Studier i industri-
 lokalisering av Gunnar Törnqvist. Stockholm: Iduns tryckeri-
 aktiebolag, Esselte, 1963.

SOU 1963:58. Aktiv lokaliseringspolitik. Betänkande avgivet av
 kommittén för näringslivets lokalisering. Stockholm: Iduns
 tryckeriaktiebolag, Esselte, 1963.

SOU 1963:62. Aktiv lokaliseringspolitik, Bilaga 2. Särskilda
 utredningar. Stockholm: Iduns tryckeriaktiebolag, Esselte, 1963.

SOU 1966:1. Svensk ekonomi 1966-1970 med utblick mot 1980.
 Stockholm: Iduns tryckeriaktiebolag, Esselte, 1966.

Arbetsmarknadsstyrelsen. Befolknings och näringssliv. Ett material
 avseende riket, länen och preliminärt avgränsade regioner,
 sammanställt inom arbetsmarknadsstyrelsens lokaliserings och
 utredningsbyrå. Karlshamn: AB Ragnar Lagerblads boktryckeri,
 1965.

Arbetsmarknadsstyrelsen. Arbetsmarknadsstyrelsens regiondelning 1961.
 A och B regioner, En översyn av den regionala indelningen,
 utförd inom arbetsmarknadsstyrelsens lokaliserings och utred-
 ningsbyrå. Karlshamn: AB Ragnar Lagerblads boktryckeri, 1961.

Arbetsmarknadsstyrelsen. Lokaliseringspolitiska insatser 1.1 1963-
 30.6. 1967. Meddelande från utredningsbyrån. Meddelande nr
 1967:33. Stencil.

Articles in Periodicals

Burlin, Henning. "Lokaliseringspolitiken - resultat och erfarenheter,"
Ekonomisk Revy, 1968:1, pp. 7-11.

Danielson, Albert. "The Locational Decision from the Point of View of
 the Individual Company," Ekonomisk Tidskrift 66 (1964), h. 2,
 pp. 47-87.

Dunn, E.S. "The Market Potential Concept and the Analysis of Location,"
Papers and Proceedings of the Regional Science Association, Vol.
 2, (1956), pp. 66-75.

Hotelling, H. "Stability in Competition," The Economic Journal XXXIX (1929), pp. 41-52.

Lindbeck, Assar. "Location Policy," Skandinaviska Banken Quarterly Review, Vol. 44-45 (1963-64), pp. 41-51.

Lindberg, Olof. "Näringsgeografiska studier över den svenska pappers-industrins lokalisering, A och B," Geographica nr 23. Uppsala: Almqvist & Wicksells Boktryckari, 1951.

Lundberg, Erik and Cederlund, Lars-Johan. "Perspectives on the Latest Recessions," Skandinaviska Banken Quarterly Review 1968:2, pp. 49-54.

Orr, E. "A Synthesis of Theories of Location, Transport Rates and of Spatial Price Equilibrium," Papers and Proceedings of the Regional Science Association, Vol. 3 (1957), pp. 61-74.

Smith, W. "Location of Industry," in Readings in Economic Geography. The Location of Economic Activity, ed. by Robert H.T. Smith, Edward J. Taaffe and Leslie E. King. Chicago: Rand McNally & Co., 1968, pp. 105-115.

Articles in Newspapers and Magazines

The Edmonton Journal. "Industrial Plan Showing Results" Oct. 31, 1966.

Harman, Nicholas and Burney, Elizabeth. "The Northeast Ready to Go - A Survey by the Economist," The Economist 17-23, Aug. 1968.

Conferences

First International Conference of Economic History. Stockholm MCMLX. Contributions and Communications. Paris: Mouton & Co., 1960.

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